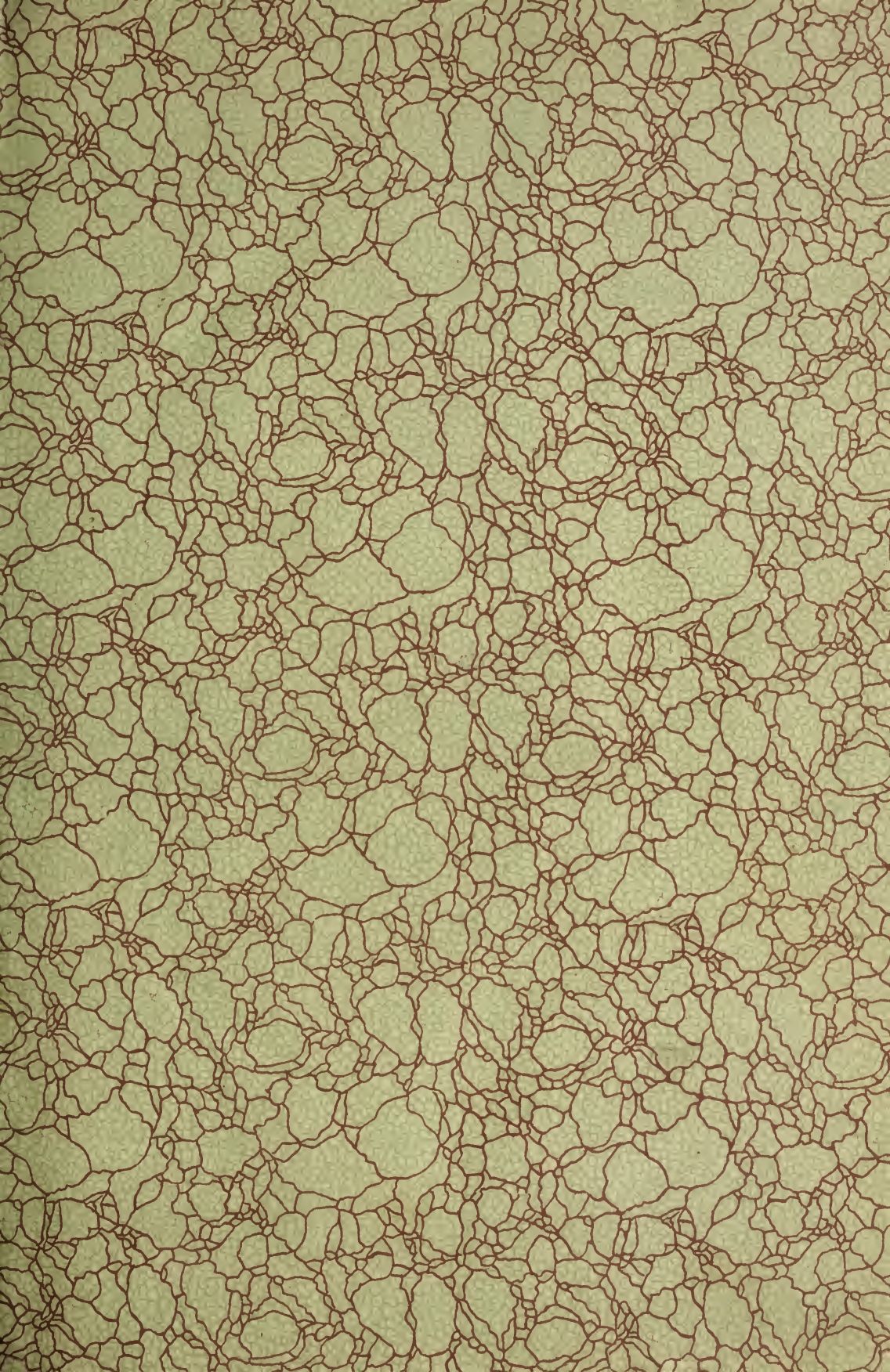



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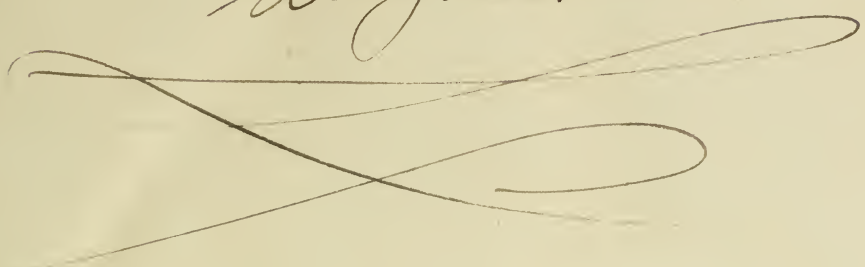


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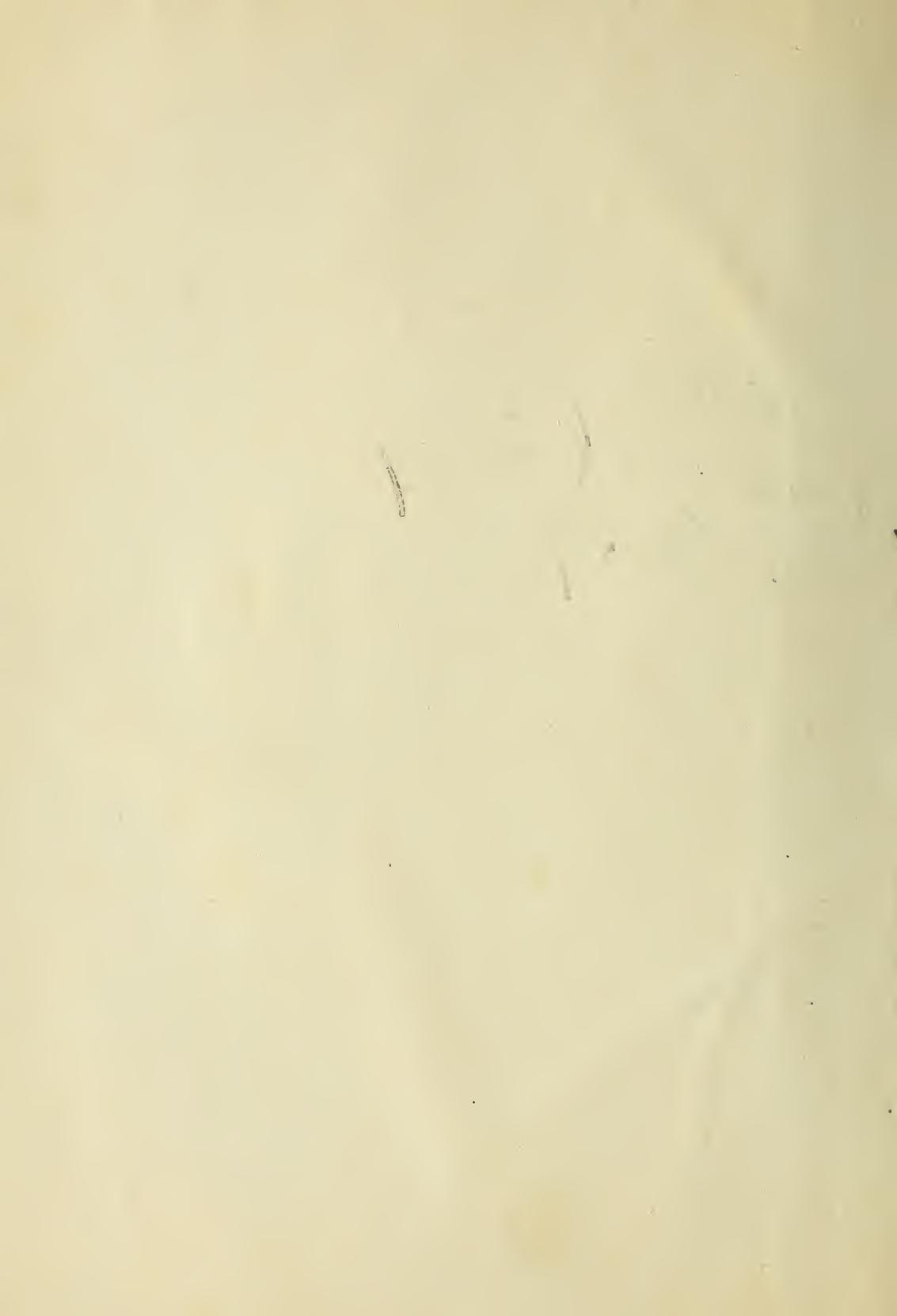
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Edna Paul





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THE PEOPLE'S HOME LIBRARY

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1913

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COMPILER'S PREFACE.

"The People's Home Library" is a set of three practical books, the aim being to give the purchaser a complete library of practical information and thus save his buying three different books. The compiler was raised in the country but for nine years he has been engaged in selling various receipt books and in training others to do the same. This has given him an excellent opportunity, not only to know the needs of the People in these lines but to study the defects and the good points of most books of this nature that are being offered the public. We have tried to avoid the mistakes of others, incorporate their good points and at the same time add many new features. For nearly nine years we have been gathering valuable receipts and planning this set of books. It has been our constant aim to make this the most practical set of books of this nature ever published. We have been exceedingly fortunate in securing authors, not only of the highest professional standing and of national reputation, but of the highest personal standing in their own communities. They are authors whose characters command the respect and confidence of all who know them and this is of the utmost importance in books of this kind which are to become household guides in a million homes.

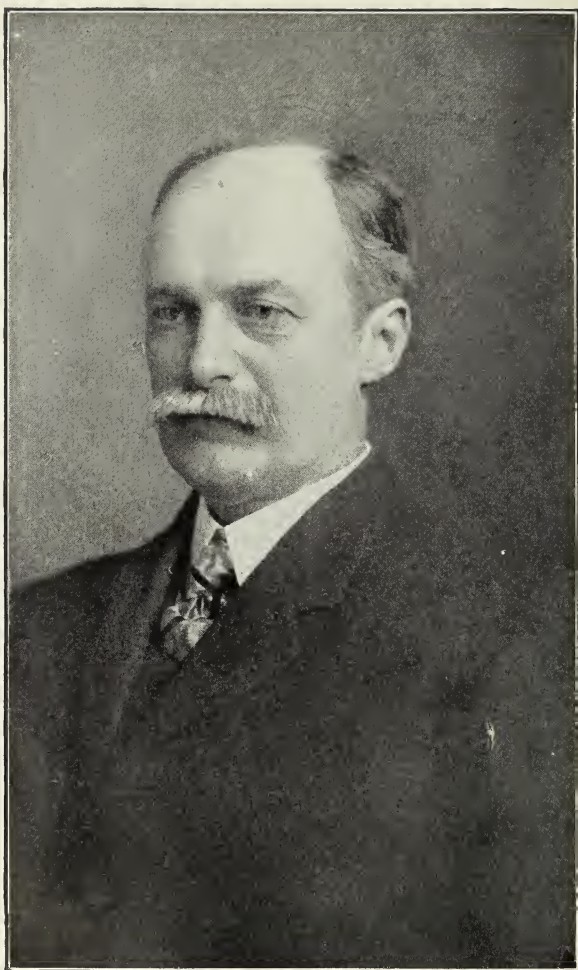
"The People's Home Library" is essentially the People's book. It was not only intended for the People but the People themselves helped compile it by contributing the "People's Home Remedies" which they have used in their homes for years and which they know to be good. These remedies and receipts have been gathered from the whole world over and much credit is due the authors for their great care and patience in correcting these receipts and adding many helpful suggestions. Every receipt in this book has been thoroughly tested and tried and found to be good. The authors have most heartily joined with the compiler in an earnest effort to make this in truth a most practical book for the People and we trust it will prove a real money-saver in the home. We believe we have succeeded in our undertaking and we therefore take pleasure in commending this book to the "People," who have so generously contributed their favorite receipts and thus made it possible to compile such a work as "The People's Home Library."

Sincerely,

R. C. BARNUM.

DEDICATION.
THE PEOPLE'S HOME LIBRARY
BEING A SET OF BOOKS
"BY THE PEOPLE AND FOR THE PEOPLE"
IS MOST RESPECTFULLY DEDICATED
TO THE PEOPLE.

"May it serve them well
in their hour of need."



J. J. Ritter M.D

THE PEOPLE'S HOME MEDICAL BOOK



BOOK I OF THE PEOPLE'S HOME LIBRARY



BY
T.J. RITTER M.D.

GRADUATE OF BOTH THE ALLOPATHIC
AND HOMEOPATHIC SCHOOLS.
FORMERLY ASST. TO THE CHAIR OF THE
THEORY AND PRACTICE OF MEDICINE,
MICHIGAN STATE UNIVERSITY,
ANN ARBOR, MICH.

PUBLISHED BY
THE R.C. BARNUM CO.
CLEVELAND, OHIO.

1913

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AUTHOR'S PREFACE.

Many so-called "home medical books" have been published. While many of them have done much good the fault with most of them has been either that they were too technical and thus not a home book at all or, that many of the remedies given were unreliable or perhaps even dangerous.

The aim has been to make this work thoroughly scientific and authentic and yet so simple and practical that it can be used in the humblest home. In its preparation the very best medical authorities of this and foreign countries have been freely read and consulted. In giving the description and symptoms of diseases such men as the following are our authorities: Professor Osler, formerly of Johns Hopkins and now of Oxford; Professor Anders of the University of Pennsylvania and Professor Hare of Jefferson Medical College, Philadelphia.

In the preparation of the parts of the work relating to surgery we have consulted such as W. W. Keen, Professor of Surgery in Jefferson Medical College and also J. William White, Professor of Clinical Surgery of the University of Pennsylvania. Both of these men are editors of the American Text Book of Surgery.

In treating of the diseases of women we are especially indebted to the work of Professor Charles B. Penrose of the University of Pennsylvania.

In the treatment of the diseases of children and in writing the chapter entitled "All About the Mother and Her Baby" the best children's specialists in the country have been read and consulted. This list of specialists includes both Koplik and Holt of New York, Douglas of Detroit and Tooker of Chicago.

In preparing the Herb Department the works most consulted were those of Dr. Shoemaker and Dr. Wood, both of Philadelphia and Dr. King, who was compiler of "King's Eclectic Dispensatory."

These men are all specialists in their particular lines and are recognized as authorities by physicians all over the world. Besides the men named many other authorities have freely been brought into use.

A special feature of the work is "The People's Home Remedies." These follow the physician's treatment of the disease and will be found the most valuable collection of simple home remedies ever published. These have been gathered from all parts of the world and are universally in use among the people. These are not merely what someone "thought" would cure, they are the "Mother's Remedies" that actually do cure. They have all been carefully gone over by myself a number of times and among them I have recognized hundreds of home remedies that I have myself used in my many years of medical practice and often I have seen fit to add incidents and remarks citing cases where these home remedies have cured and explaining why they cured. Only the very best have been saved for this work and after having had over thirty years of experience as a practicing physician I can pronounce them absolutely safe and reliable. Truly this is The

People's Book for it was not only written for the people but the people themselves helped get it up.

Realizing that not all diseases can be treated at home we have endeavored to make it clear when a physician is necessary and have advised sending for him in such cases. That the book may be practical we have seen fit to give first place to "Nursing" and have given both general and special instructions as to "Nursing and Diet" together with full directions as to the use of home-aids and auxiliary treatments. We not only tell "What To Do" but, what is often of equal importance, we tell "What Not To Do." Special attention has also been given to Preventive Treatments for is it not better to prevent a disease than to wait until you get it and then try to cure it?

My connection with the state University of Michigan as Assistant to the Chair of the Theory and Practice of Medicine is perhaps a sufficient guarantee of the reliability of this book and my experience in the hospital together with over thirty years of actual medical practice have perhaps rendered me competent to make the work thoroughly practical.

It has been my aim to make this work so reliable that it will be recommended by every physician in the land and yet so practical that it will be used in every home throughout the country.

THE AUTHOR.

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CHEMICAL LABORATORY



MEDICAL BUILDING



HOMŒOPATHIC HOSPITAL



UNIVERSITY HOSPITAL

HOSPITALS AND MEDICAL BUILDINGS OF MICHIGAN STATE UNIVERSITY.

Dr. Ritter was formerly Assistant to the Chair of the Theory and Practice of Medicine at Michigan State University at Ann Arbor, Mich.

NURSING DEPARTMENT

QUALITIES OF A GOOD NURSE.

The nurse is now an important factor in the treatment of diseases. Nurses are born, not made. Some people can never become nurses. A good nurse is a combination of many qualities. She needs to be healthy, clean, strong, pleasant, tactful, obedient, cheerful, and in love with her work. She should not be given to gossip and should have a great big heart filled with good things. She needs to know enough to follow the doctor's directions and, also, to be able to meet emergencies when the doctor is not present and cannot be reached. She should know something of the symptoms of diseases and to aid in this we herewith give a table of symptoms that we believe will be found valuable in every home.

TABLE OF SYMPTOMS.

Color of Skin.

Yellow.—Generally means jaundice.

Sallow Yellow.—When patient is haggard and emaciated means some malignant disease like cancer.

Waxy Pale Skin.—With swelling under eyes indicates Bright's disease.

Paleness.—Is caused by shock or loss of blood.

Whiteness.—Means anemia. Small quantity of blood and of poor quality.

Greenish White.—Shows chlorosis which is commonly called green sickness.

Purplish.—Cyanosis or mixture of pure and impure blood. Blood not properly purified.

Bronze.—Addison's disease.

Hectic or Red Cheeks.—Means tuberculous constitution.

Single Red Cheek.—When seen with fan-like motion of wings of nose when breathing indicates pneumonia.

Bluish or Inky Lips and Tongue.—Addison's disease.

Tongue.

Strawberry Tongue.—Scarlet fever. First looks like an unripe and later like a ripe strawberry.

Yellowish Brown.—Liver Trouble.

Whitish with Thick Coating.—Usually some stomach trouble.

Dry, Red, Dark and Cracked and Teeth Covered with Coating.—Generally means typhoid fever.

Coated on Back Part.—Dyspepsia and constipation.

Cracked and Red.—Last stages of peritonitis.

Bluish or Inky Tongue and Lips.—Addison's disease.

Rash.

Scarlet Color.—Scarlet fever.

Blotchy and Muddy.—Measles.

Scattered Raised Spots with Whitish Pimples.—Chicken-pox.

Spots Containing Water and Pus.—Small-pox.

Spitting.

Glairy Mucus.—Catarrh.

Dark Blood, Spitting or Vomiting.—Hemorrhage or bleeding from stomach.

Frothy, Red Blood, Spitting or Vomiting.—Hemorrhage or bleeding from lungs or lower bronchial tubes.

Vomiting.

Yellow or Green Material.—Usually shows bile.

Coffee Grounds.—Malignant growth; probably cancer of stomach.

Dark Blood.—Bleeding from Stomach.

Red, Frothy Blood.—Bleeding from lungs.

Feces (with odor).—Shows vomiting of contents of upper bowel. Probably due to obstruction of bowel.

Projectile (vomiting with force).—Usually means meningitis.

Dark Acid Brown.—Peritonitis.

Bloating.

Of Stomach.—Indigestion. Dilated stomach.

Under Eyes.—Kidney trouble.

Of Face.—Kidney trouble. Heart trouble. Poor condition generally.

Of Abdomen.—Cirrhosis or hardening of liver. Tumors of ovaries, etc.

Of Legs and Feet.—Kidney trouble. Often from pressure on veins.

Sore Throat.

Red in Back Part of Throat.—Pharyngitis.

"Whitish-yellowish-brown" or Grayish Spots or Membrane on Tonsils.—Tonsillitis or diphtheria. If membrane is removed in diphtheria surface is left raw and bleeding but not in tonsillitis.

Fever.

Fever.—Shows rise in temperature. Found in inflammatory diseases such as tonsillitis, gastritis, appendicitis, etc. Also in infectious diseases such as diphtheria, scarlet fever, typhoid fever, etc. Also in acute rheumatism, pleurisy, pneumonia, nephritis, etc.

Chill.

Chill.—Indicates lower external temperature. Found in malaria, grip, pneumonia, nervousness, etc.

Cough.

Coughing.—Is often due to irritation from dust or smoking; also, to nervousness and indigestion.

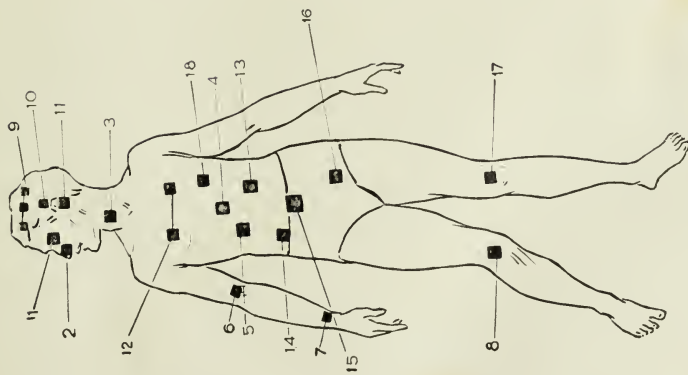
Dry, Hacking Cough.—May mean consumption.

Coarse, Barking Cough.—Whooping cough.

Spasmodic Coughing.—Whooping cough or laryngitis.

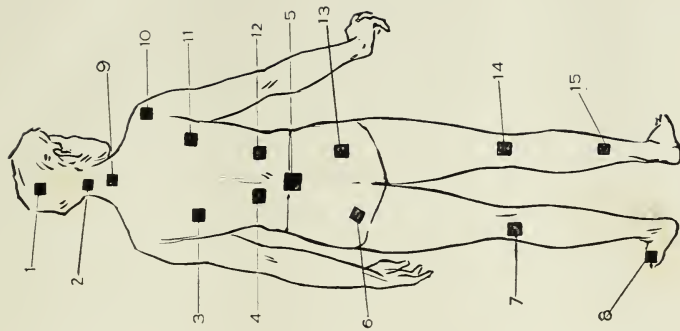
Loose Cough.—Due to mucus in air passages.

CHARTS OF SYMPTOMS. (See Index for Diseases and their Treatments.)



FRONT.

1. Diseases of the Eye.
2. Diseases of the Nose.
3. Diseases of the Throat.
4. Diseases of the Stomach.
5. Diseases of the Liver.
6. Articular Rheumatism.
7. Rheumatism.
8. Headache.
9. Neuralgia.
10. Diseases of the Ear.
11. Diseases of the Lungs.
12. Diseases of the Bowels.
13. Appendicitis.
14. Diseases of the Bladder.
15. Rupture.
16. Rheumatism.
17. Headache.
18. Diseases of the Heart.



BACK.

1. Headache.
2. Brain Disease.
3. Pleurisy.
4. Kidney Disease.
5. Lumbago.
6. Sciatica.
7. Rheumatism.
8. Gout.
9. Stiff Neck.
10. Rheumatism.
11. Pleurisy.
12. Kidney Disease.
13. Sciatica.
14. Sciatica.
15. Sciatica.



Cry of Child.

Crying.—Usually indicates pain or anger.

Boisterous, Temporary Cry.—Anger.

Catchy, Jerky Cry.—Pain.

Moaning, Wailing Cry.—Disease.

Stools.

Greenish.—Improper feeding, usually in children.

Bloody and Slimy.—Dysentery, piles or ulcers of bowels.

Watery.—Generally in cholera infantum.

Frequent.—Diarrhœa.

Infrequent.—Constipation.

Urine.

Bloody.—Hemorrhage or bleeding from kidneys.

Pale.—Generally nervousness. May be diabetes insipidus.

White.—Generally from deposits of white gravel.

Brick Dust.—Indicates uric acid deposits.

Swellings.

Under Jaw.—Enlarged glands.

Side of Jaw in Front of Ear.—Mumps.

Front of Neck.—Goitre.

At Joints.—Enlarged bursa (joint oil). Particularly at wrist.

Eyes.

Red and Inflamed.—Inflammation of eyes.

Rolling of Eyes.—Generally caused by brain irritation.

Turned Sideways in Disease.—Meningitis.

Contracted (small) Pupils.—Generally poisoning from opium.

Dilated (enlarged) Pupils.—Apoplexy. Poisoning from atropine.

Nose.

Movement of Nostrils in Breathing.—Frequently seen in pneumonia.

Picking Nose.—Often means worms and especially if there is scratching of rectum.

Headache.

Front Part, Dull Aching.—Caused by constipation or dyspepsia.

Aching in Eyes.—Generally glasses are needed.

Top and Back of Head.—In women this frequently indicates womb disease.

Back Part.—Nervous headache, sick headache or spinal trouble.

Throbbing.—Congestion.

In Temples (neuralgia).—May be due to bad teeth.

Frothing at Mouth.

Frothing at Mouth.—Convulsions, paralysis or apoplexy.

Hands and Feet.

Cold Hands and Feet.—Poor circulation and low condition. Also seen in last stages of disease before death.

Bleeding.

From Nose.—Congestion. May be from diphtheria, whooping cough or tumors. Beginning of typhoid fever.

From Mouth.—Comes from stomach, lungs, throat or teeth. If frothy red, from lungs. If dark red, from stomach.

From Rectum.—Due to piles, ulcers or intestinal hemorrhage.

Steady Flow of Dark Blood.—From veins. Bandage on side of wound farthest from heart.

Bright Red and in Spurts.—From arteries. Bandage between wound and heart.

Discharges.

From Nose or Eyes.—Means inflammation and needs attention.

Pains.

See "Table of Pains and Aches" following.

TABLE OF PAINS AND ACHES.**Head.**

Forehead.—Often due to stomach or to constipation.

Over Eyebrows.—Catarrh or grip.

Top Part.—In women frequently due to womb trouble.

Temples.—Generally neuralgia and may be from ear or teeth.

Neck (nape of).—Spinal troubles and nervousness.

Neck, Continued Stiffness of Nape.—One of the first symptoms of typhoid fever.

Chest.

In Lungs.—Pleurisy, pneumonia, consumption.

Muscles of Chest.—Rheumatism or neuritis.

Under Edge of Ribs.—Intercostal neuralgia. (Neuritis.)

Band Around Chest on Heart Line.—Heart Disease.

Pain in Breathing.—Generally pleurisy or pneumonia.

Around Heart.—May be heart trouble, muscular rheumatism or heartburn.

Heartburn is due to pressure from gas in stomach or bowels.

Streaking from Heart Region to Shoulder and down inner side of Arm.—Frequently indicates valvular heart disease.

Abdomen.

Pain in Stomach.—Probably due to indigestion. May be dilation or gas.

In Stomach and Radiating to Back Bone.—Ulcer of Stomach.

In Stomach.—May be due to cancer.

Between Navel and Point of Hip Bone on Right Side.—Likely to be appendicitis. Especially if muscles are tense and hard.

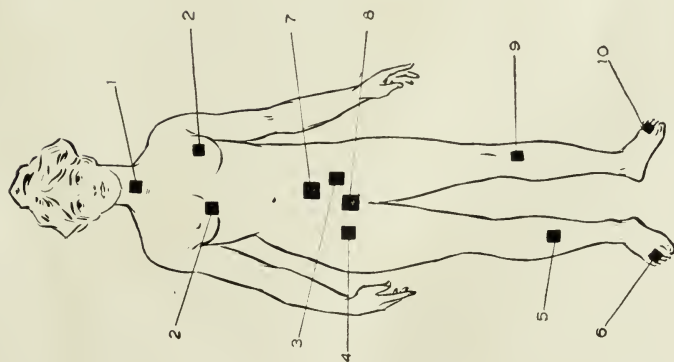
Right Side under Ribs and Liver and Higher than in Appendicitis.—Gall stones.

Running from Kidney to Bladder and into Groin or Scrotum.—Usually due to gravel.

Band Around and Below the Waist.—Disease of spinal cord.

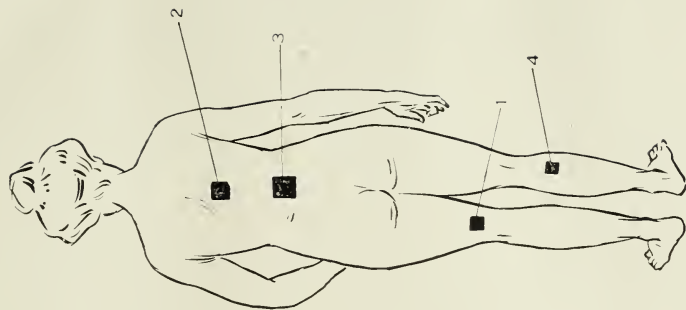
CHARTS OF SYMPTOMS.

(See Index for Diseases and their Treatments.)



FRONT.

1. Goitre.
2. Diseases of the Breasts.
3. Peritonitis.
4. Diseases of the Ovary.
5. Ulcer of the Leg.
6. Bunions.
7. Abdominal Hernia.
8. Worn Diseases.
9. Varicose Veins.
10. Corns.



BACK.

1. Varicose Veins.
2. Curvature of the Spine.
3. Backache.
4. Varicose Veins.

Back.

Pain under Ribs near Back Bone.—Kidney trouble. Kidneys are higher up than most people think.

In Deep Muscles of Back.—Lumbago.

Very Low in Back.—Piles or injured bone. (Coccyx.)

Shoulder.

Pain under Right Shoulder Blade.—Liver trouble.

Legs.

Pain in Back Part of Thigh and Leg to Foot.—Sciatica.

Knee.—Rheumatism, white swelling or hip joint disease.

Joints.

Pain or Aching in Joints.—Generally due to rheumatism.

Pain in Urinating.

Pain in Passing Urine.—Local inflammation of urethra or bladder or due to acid or alkaline urine.

COMPARISON OF DISEASES.**Diphtheria, Tonsilitis and Quinsy.**

Diphtheria.—First there is a spot or spots on the tonsils or perhaps on the soft palate or uvula, then the membrane quickly forms and perhaps extends to the other parts.

Membrane when forcibly removed leaves a red, raw surface and speedily returns.

Membrane is of a "whitish-yellow-brown" or grayish color.

Bad tongue somewhat the color of the membrane.

Very bad breath.

Tonsilitis.—Spot or spots on the tonsils; membrane forms on the tonsils only.

Membrane when it comes off leaves a glistening surface.

Membrane of a whitish yellow brown or grayish color.

Bad tongue somewhat the color of the membrane.

Very bad breath.

Quinsy.—No spots or membrane.

The disease is in the body of the tonsil and surrounding soft parts back of it.

Jaw is generally quite stiff and the patient is sometimes unable to open the mouth.

Note.—It is sometimes impossible to distinguish between diphtheria and tonsilitis without the regular medical test. Especially is this true when the spots or membrane are confined to the tonsils.

Measles, German Measles, Chicken-pox and Small-pox.

Measles.—Sneezing, water running from nose, watery eyes and generally a bad cough.

A great deal of fever.

The eruption is generally thick and in blotches or spots.

Eruption appears first in the mouth and on the face.

German Measles.—Milder than measles and not so much catarrh, often none. Not much fever.

The eruption is more scattered than in measles and of a lighter color.

There is a greater tendency to affect the glands of the neck than in true measles.

Chicken-pox.—Generally mild.

Eruption consists of rose-colored spots.

Eruption first appears on the neck and trunk of body.

Eruption changes within a few hours into pimples with a white top.

The spots may number from a dozen to hundreds.

Small-pox.—There is first a sense of uneasiness, weariness and soreness.

Severe pain in the head as if it would fly to pieces. An indescribable pain in the back.

Very bad breath.

Eruption is first seen upon the face and exposed parts of the body in the form of small red points. These enlarge greatly and finally fill with pus.

Another symptom is a feeling as though there were shot under the skin when the hand is passed over the forehead.

Scarlet Fever and Roseola.

Scarlet Fever.—Eruption consists of very minute red points, not raised, and so crowded that the skin appears of a uniform bright red over the whole body.

Eruption appears first on the chest and roof of the mouth.

There is generally the peculiar strawberry tongue, looking first like an unripe and later like a ripe strawberry.

Generally there is sore throat either mild or severe.

Roseola.—Eruption is a deep scarlet flush.

Eruption shows in patches and is not uniform over the body.

Eruption first appears on limbs and body.

Tongue may be covered with a thick whitish yellow coating.

There is not generally a sore throat.

Renal or Kidney Colic, Gall Stone Colic and Appendicitis.

Renal or Kidney Colic.—The pain is very severe.

The pain runs from back, under the ribs, and especially when there is much uric acid in the urine the pain runs down into the bladder and scrotum.

There is a history of kidney stones or red sand in the urine.

Gall Stone Colic.—The pain is generally excruciating.

The pain is generally under the ribs and in the stomach.

There is a history of gall stones.

Generally a bilious complexion.

Appendicitis.—The pain may be severe but is generally a severe aching.

The pain is located midway between the navel and the point of the hip bone and does not extend down into the scrotum.

The muscles of the abdomen are tense and hard.

WHAT THE HOME MEDICINE CHEST SHOULD CONTAIN.

Appliances.—The medicine chest should contain scales with scruple and dram weights, four-ounce glass graduate, one-dram graduate, correct medicine dropper, four-ounce hard rubber syringe, camel's hair brushes, absorbent cotton, rolled bandages one and two inches wide and three to five yards long; surgeon's gauze, old muslin and linen, court plaster, rubber adhesive plaster and paraffin paper.

Allopathic Medicines.

Internal Medicines.—Olive oil, glycerine, whisky, gin, sherry wine, magnesia, castor oil, syrup of rhubarb, baking soda, sweet spirits of nitre, essence of peppermint, essence of wintergreen, syrup of ipecac, hive syrup, paregoric, laudanum, quinine, one and two-grain quinine pills, soda mint, aromatic spirits of ammonia.

External Medicines.—Alcohol, ammonia water, turpentine, chloroform, soap liniment, extract of witch hazel, tincture of iodine, boric acid, flaxseed meal, vaseline, benzoated lard, zinc ointment.

For Poisoning.—Vinegar, tannic acid, epsom salts, sulphate of copper in three-grain powders. For poisoning by matches, Jeannel's antidote.

Homeopathic Medicines.

Homeopathic medicines are prepared in the form of tinctures and powders. From the tinctures the "dilutions" are made. From the powders are made "triturations" and these are often compressed into tablets. "Dilution" thus means the liquid form of the medicine and according to strength it is called first (1st) dilution, 2nd dilution, 3rd dilution, etc. The medicine may be bought in these strengths. The higher the dilution the weaker the medicine.

"Trituration" means the powdered form of the medicine and it is called first (1st) trituration or 1x, 2nd trituration or 2x, 3d trituration or 3x. These triturations are generally compressed into tablets as they are handier to use in tablet form. The higher the trituration, the weaker the medicine.

If you are not referring to either the liquid or powder form of the medicine you can call either a dilution or a trituration an "attenuation." It is better to specify either the dilution or the trituration.

In using these medicines in the liquid or dilution form you usually put ten to fifteen drops of the dilution (say 1st, 2nd or 3d dilution) into a glass one-half full of water and of this you give two teaspoonfuls every half hour, hour, two hours or three hours according to the case. By this you will know the dose of any homeopathic medicine used in this book if it is not given. We have endeavored, however, to give the dose in each case.

When you use the medicine in tablet form you give one or two tablets dry on the tongue or dissolve them in a little water. They are given every half hour to three hours according to the case so you will know the dose should it not be given with any homeopathic remedy in the book.

Some medicines are best used in dilution and some in tablet form. We will give the kind to use and the strength of the same in naming the remedies.

You can buy the homeopathic medicines in some drug stores or you can get them from a good homeopathic physician. The Boericke and Tafel preparations are the dearest but it pays to buy them if you can.

You can use the dilutions to saturate disks. Buy a pound of No. 6 homeopathic disks. Fill a four-dram bottle with these and then pour it one-fourth full of the dilution wanted, that is, enough to saturate all the disks. They should look wet. Shake the bottle. This is a nice way of using the dilutions. The medicines keep well if in a dark cool place away from camphor, ammonia, coffee, chloroform and liniments. They must be kept away from the allopathic medicine chest.

The following medicines and strengths are recommended for the homeopathic chest. Buy only the homeopathic preparations. Remember "dilutions" are the liquid forms and "triturations" are tablets or powders. Where triturations are mentioned we advise tablets instead of powders.

Aconite 2x or 2nd dilution.
 Apis. Mel 2x or 2nd trituration.
 Arsenicum Alb. 3x or 3rd trituration.
 Belladonna 3x or 3rd dilution.
 Bryonia 2x or 2nd dilution.
 Chamomilla 1x or 1st dilution.
 China officinalis 2x or 2nd dilution.
 Gelsemium 1x or 1st dilution.
 Hepar Sulph. 3x or 3rd trituration.
 Kali bich. 3x or 3rd trituration.
 Mercurius Sol. 3x or 3rd trituration.
 Mercurius biniodide 3x or 3rd trituration.
 Nux Vomica 3x or 3rd trituration.

Phosphorus 3x or 3rd dilution.
 Pulsatilla 3x or 3rd trituration.
 Rhus tox 6x or 6th trituration.
 Sepia 6x or 6th trituration.
 Spongia 3x or 3rd trituration.
 Sulphur 12x or 12th trituration.
 Veratrum alb 2x or 2nd dilution.
 Tartar Emetic 3x or 3rd trituration.
 Lycopodium 12x or 12th trituration.
 Sanguinaria 2x or 2nd dilution.
 Iris versicolor 2x or 2nd dilution.
 Phosphoric Acid 3x or 3rd dilution.
 Coccus 1x or 1st dilution.

DOSES OF MEDICINE FOR VARIOUS AGES.

Wherever doses are mentioned without giving the age they are intended for adults. There are several ways of determining the proportion for a child. One way, and an easy one to remember, is to add the number 12 to the age of the child and use the sum as a denominator, then place the age of the child above the line for a numerator and the resulting fraction will be the proportion of the adult dose to use. Say the child is 2 years of age, add 12 to 2 which makes 14 for the denominator; then use 2 as the numerator and you have $\frac{2}{14}$, or $\frac{1}{7}$ of the adult dose. This rule will need to be varied according to the size and physical condition of the child. If it is a strong robust child the dose may be made a little larger than for the age indicated. Then, again, the rule must be varied according to the kind of medicine given. If you are giving opiates or narcotics to a child you should give but one half the dose indicated for the age. Thus, for a child of 2 years instead of giving $\frac{1}{7}$ of a dose as we figured above you should give but half that or $\frac{1}{14}$ of the adult dose. If you are giving laxatives you can give two or three times the normal child dose. Thus, for the child 2 years old you would give either $\frac{2}{7}$ or $\frac{3}{7}$ of the adult dose. If a child be less than a year old, first find the dose for 1 year, then take the proportion of that indicated by the age. For example: if the child is six months old, or $\frac{1}{2}$ year, you would give half the dose indicated for a child a year old.

Here is another method and by referring to the table you will not have to figure the dose each time.

7 weeks	one-thirtieth	Under 14 years	one-half
7 months	one-twentieth	" 20 "	four-fifths
1 year	one-tenth	Above 21 "	full dose
Under 2 years.....	one-eighth	" 65 "	eleven-twelfths
" 3 "	one-sixth	" 70 "	five-sixths
" 4 "	one-fourth	" 85 "	two-thirds
" 5 "	one-third		

TABLES OF WEIGHTS AND MEASURES FOR MEDICINES.

1 minim generally equals	1 drop.
60 drops make	1 fluid drachm, or 1 small teaspoonful.
8 fluid drachms make	1 fluid ounce, or 2 tablespoonfuls.
16 fluid ounces make	1 pint, or about 1 pound in weight.
1 drop generally equals.....	1 grain.
20 grains make	1 scruple, or 1-3 teaspoonful.
3 scruples make	1 dram, or 1 teaspoonful.
8 drams make	1 ounce, or 2 tablespoonfuls.
1 tablespoonful equals	4 teaspoonfuls.
1 teacup equals	4 fluid ounces.
1 coffee cup equals	6 fluid ounces.
1 wineglass equals	2 to 4 tablespoonfuls.

SIGNS AND ABBREVIATIONS USED BY PHYSICIANS.

Tr., tincture; ext., solid extract; fl. ext., fluid extract; syr., syrup; inf., infusion; dec., decoction; oz., ounce; dr., dram or drachm; gr., grain; scr., scruple; pt., pint; qt., quart; gal., gallon.

℥	= dram.
℥ss	= fluid dram.
℥	= ounce.
℥ss	= fluid ounce.
℥	= pint.
℥j	= 1 pint.
℥j	= 1 dram.
℥ss	= 2 drams.
℥ss	= 3 drams.
℥iv	= 4 drams.
℥v	= 5 drams.
℥ssj	= 1 fluid dram.
℥ssj	= 1 fluid ounce.

HOW TO MAKE THE PATIENT COMFORTABLE IN BED.

Changing Night Gown.

Remove one sleeve of the gown and immediately put on same sleeve of the clean gown by passing your hand through the sleeve from the hand end and grasping the hand of the patient and drawing his arm through, or pushing the sleeve up his arm. Slip the gown across the chest under the

soiled one and put the second sleeve on the same as the first. Turn to the side to button. This is for a gown that opens in the back. When the gown is a closed one or opens in the front and is long, have the patient lie on his back with his knees bent. Have him slightly raise his thighs or raise him yourself by placing one of your hands under his buttocks (seat) and then draw the gown up with the other hand after it has been put over his feet and knees. Then slip one arm under his shoulder and support his head with that arm. Draw the gown well up around his neck. Slip one of your hands through the upper armhole of one of the sleeves, grasp his arm above the elbow and bend it while you draw the sleeve of soiled gown off with the other hand. Place the sleeves of clean gown on as directed above and button.

To Change Under Sheet.

If the patient can move turn him on his side and roll soiled sheet over as far as possible. Roll the clean sheet half width and put against the soiled one. Then gently turn the patient on his back and other side and pull out the soiled sheet and at the same time pull or unroll the clean one. When rolling the sheets, roll in widths of say four inches and then when the sick one is rolled on his back and side he will not feel the roll. When the patient cannot be moved you can work the soiled sheet from the top down and roll the clean one and work it down slowly and gently at the same time with very little lifting of the patient.

How to Move the Patient from One Bed to Another.

Place beds together. If of the same height draw the patient to the new bed by pulling on the sheet. It is best to roll the sheet up to the patient for it is thus made stronger and gives a better hold. When it is necessary to carry the patient roll him in the upper sheet and blanket. It usually takes two for this. One puts his hands under the patient's shoulders and buttocks and the other under his thighs and back. Draw him gently to the edge of the bed and carry carefully to the bed which has been prepared.

To Lift and Carry the Patient When Sitting.

Place your arm over his shoulder and take a firm hold under the opposite arm. Have the patient clasp his arms on your far shoulder and then place your free arm under his knees.

To Draw a Patient Up in Bed.

Bend the patient's knees so that his feet will rest firmly on the bed; grasp him under his far arm, bending your arm so that his head will rest in your elbow joint; put your other arm under his thighs, bend your knees slightly to avoid bending your back, and move the patient gently upward. If two are required, do as follows: One grasps the patient under the arm as though he were to move him alone and then places the other arm under the small of the back. The other person also places one arm under the small of the back and the other arm under his thighs.

How to Sit a Patient Up in Bed.

You can have a back-rest or pad a chair. Put a cane or wooden seated chair up-side-down on the bed with front part against the bed or bedstead. Then put pillows between the patient and chair and arrange to his comfort.

To Place a Patient in a Chair.

Place the chair with the front to the bed; make it soft with pillows on the seat and at the back with open end of pillow case down. Place one arm around the patient's shoulder with the hand under his opposite arm. Place your other arm under his thighs. If too heavy for one, put one of your arms around shoulder as before and the other under his buttocks. The second person then puts one arm around small of back and the other under the thighs near the knees.

The Bed Pan and How to Use It.

You should always use a bed pan as the old-fashioned chamber necessitates sitting the patient up and cannot be used in many diseases. The old kind should never be used in typhoid fever, appendicitis or any bowel trouble. Get the metal bed pan. It should be kept clean and sweet. Wash daily with hot water and soap suds and scald. Copperas solution is a good thing to use in them as a disinfectant for bowel contents and urine. To use the bed pan, bend the knees of the patient so that his feet will rest firmly on the bed. Then pass one hand under the lower part of the back and raise him a little as you gently push the pan up with the other hand. Raise him the same way before attempting to remove the pan. Have the pan warm and cover it immediately after it is removed. To cleanse the parts thoroughly it is well to place a clean pan and then cleanse.

How to Cleanse the Mouth and Teeth.

This is very needful in disease and especially in typhoid fever. Wrap a piece of gauze or absorbent cotton or a piece of clean linen around your index finger or around a small piece of whale bone or stick. Wet this in the mouth wash and clean every part thoroughly. Carefully clean the tongue but do not use the same piece twice. Listerine, half strength, or any other like antiseptic is good. The boric acid solution is especially good.

Prevention and Care of Bed Sores.

These are often due to old age, fevers, some spinal disease, paralysis or general dropsy but the exciting causes are wrinkles in the bed clothes, moisture from the bowels and urine, bread crumbs, dirt, and remaining in one position too long. The preventive treatment is cleanliness and change of position. The active treatment is to bathe the red spot with alcohol and dust with the following powder from two to four times in twenty-four hours. Mix $\frac{1}{2}$ ounce of powder of boric acid with 1 ounce of powder of oxide of zinc. Rubber rings are also good. If the skin is in danger of breaking wash gently with warm alcohol every six hours and rub with alcohol and powder every three hours. When the sores have formed observe cleanliness and use an ointment of castor oil and alcohol thickened with zinc oxide powder. Another good powder is boric acid, $\frac{1}{2}$ dram; oxide of zinc, 1 dram; anoline, 6 ounces; alboline, $\frac{1}{2}$ ounce.

DISINFECTANTS AND ANTISEPTICS.

Where we use disinfectants they are intended for use in the sick room, for vessels, etc., but are generally too strong for use on the body. The antiseptics are intended for use on the body such as for sores, mouth washes, etc.

Carbolic Acid Disinfectant.—Use 6 ounces of carbolic acid to a gallon of water. This is suitable for clothing, dishes, metals and the hands of nurses. Soak clothes in it and boil.

It can also be used on curtains and sheets and placed at doors and windows to prevent the spread of the contagion.

Carbolic Acid Antiseptic Solution.—Use 1 part of carbolic acid to 125 parts of water, or 1 teaspoonful of acid to a pint of water. This may be used as a vaginal douche or when there is a foul smelling discharge from sores, etc., but for wounds and sores I would advise the use of some of the milder antiseptics such as glyco-thymoline, listerine, borolyptal or boric acid solution. Carbolic acid in any form should be marked "Poison," and should be kept out of reach of children.

Corrosive Sublimate (Bichloride of Mercury) Disinfectant and Antiseptic.—This can be bought in tablets of any strength desired so that when dissolved in water it will make from one one-thousandth to a one ten-thousandth solution. Dissolve one tablet, strength one to four-thousand in a pint of boiling water. Keep in a bottle marked "Poison." Good for bed pan and as a cleansing wash for old sores. It is better to use this as a disinfectant only and use something else as an antiseptic.

Boric Acid Antiseptic Wash for Mouth.—Dissolve $\frac{1}{2}$ ounce of boric acid in a pint of water.

Copperas Disinfectant.—Put a lump as large as a walnut in the chamber with half a pint of water to receive discharges of all kinds such as urine, sputum, feces and vomited matter from contagious and infectious patients.

Chloride of Lime.—Use 6 ounces of lime to a gallon of soft water. It should be kept in the vessel to receive the discharges from contagious patients. Let it stand for several hours before emptying.

Disinfecting Vapor.—This is useful in the room of a diphtheria patient or patient of foul odors. Use pure carbolic acid, 1 ounce; oil of eucalyptus, 1 ounce; spirits of turpentine, 4 ounces. Put one or two tablespoonfuls into hot water and keep it simmering constantly. Avoid going near the fire with this mixture.

Dry Disinfectants.—Chloride of lime and copperas may be used freely in closets and cesspools.

Disinfecting a Room After a Contagious Disease.—Take the paper from the walls and wash the walls and the woodwork with a one to one-thousand solution of corrosive sublimate then stop up all the cracks and burn sulphur in the room. Wash the hands carefully after having them in the above solution. Formaldehyde is a more effective disinfectant to burn in the room but it is dangerous and it is best to leave its use to the health officers.

BATHS.

Bathing is essential to health. Some people can enjoy it daily; some want it cold and others warm. Morning is usually the best time. The water

should not be too warm as one is then likely to take cold. When taking a cold bath put water on the back of the neck first and then step into the bath. This lessens the chilly feeling. If you bathe frequently do not bathe longer than ten minutes. Rub briskly during and after a cold bath.

Bed Bath.—Close the windows, be sure there is no draught and that the room is warm and comfortable. Place a folded blanket over the chest and tuck a corner of it under the mattress on both sides to keep it from slipping down; turn down the bed clothing, unfolding the blanket at the same time; slip second blanket or half of large one under the patient and take off the night gown. Then proceed first with the face, neck, arms, chest, etc., and dry as you go. Rub the patient afterward with alcohol. Never expose the patient but always keep him covered. Do not hurry and on the other hand do not take so long as to exhaust the patient. Wash cloths should be well wrung out before using. Unless specially directed the temperature of the water is to be comfortable for the patient.

To Wash the Hair of the Patient.—Do not do this in a case of diphtheria. It is generally prohibited in acute diseases. In chronic diseases it is generally necessary. You need a pitcher, soap, plenty of hot and cold water and a jar into which to empty the water. You will also need some soft towels and a rubber to protect the pillows. Bring the patient to the side of the bed; pin one end of the rubber around the neck and with the rest make a trough extending to a foot bath or basin a few inches lower than the head to receive the dripping. First use soap water, rubbing hair and scalp well, and follow with clear water. Dry the hair with warm towels and by fanning. Wait until dry before braiding.

Tub Bath.—This is for a high fever. Use a portable tub if possible.

Sponge Baths.—Must be given by an experienced hand. An easy way to give a sponge or towel bath is to put one thick flannel sheet under and one over the patient after the night robe has been taken off. The blankets will absorb all the water you spill. Use water which is comfortable for the patient, unless there is a high fever, when it should be as cold as can be borne without badly affecting the patient. Wring cloth or sponge pretty dry and commence with the face and go down. Rub dry after washing a foot or two of space. In this way a bath can be given very easily. After a corn sweat a patient can be washed off in the same way only you need not use any new sheets. The old ones will do for you must change them anyway. All sheets should be thoroughly dried and aired before being used. Do not take them out of their packing place and put directly upon the sick bed. Put them in the sunlight by a closed window or on a radiator or in any other place where they will air and dry.

Sitz Bath.—This is good for inflammations of the pelvic organs and rectum and also in labor. You should have a specially prepared tub. Fasten a blanket around both the patient and the tub and wrap a second blanket around patient's feet and hips. The temperature of the water should be from 110 to 112 degrees. The bath should last five minutes and perhaps ten minutes in some cases.

In labor you can use a common tub and sit in it or sit over a large pail of hot water. This frequently increases the pain and relaxes the perineum.

Foot Baths.—Fold the bed clothes up from the foot of the bed to above the patient's knees. Cover the feet and limbs with a double blanket and turn the blanket over the feet and back under the hips. Bend the patient's

knees and place foot tub half filled with water, 112 to 115 degrees, lengthwise in the bed between the folds of the blanket. Lift the feet with one hand and with the other draw the tub under them. Put them into the water slowly so as to accustom them to the heated water. Fold the blanket around the tub and knees and bring down the bed clothes. In ten minutes carefully pour in some more hot water but do not pour it directly on the patient's feet for fear of burning. The bath may last twenty minutes. Take it away in the same manner as you placed it there. Dry the feet well and place a hot water bag against them.

Sulphur Baths.—Add 20 grains of sulphate of potassium to each gallon of water which should be of the temperature of about 95 degrees. Remember that sulphur discolours metal.

Bran Baths.—Boil one pound of bran in a bag for twenty minutes; drain off the fluid and add it to the bath water at the temperature of about 95 degrees. Fill tub half full of water.

Soda Baths.—These are for itching of the skin. Use 8 ounces of soda to each gallon of water. Remain quiet in these baths for from five to twenty minutes. Envelop the patient in a hot sheet and dry gently.

Salt Baths.—Use 15 pounds of salt to a tub half full of water. The temperature should be from 65 to 70 degrees. Rub well both during and after the bath.

Mustard Foot Baths.—These are good for colds and whenever you wish to draw the blood from the head to the extremities. Use two tablespoonfuls of mustard to a gallon of hot water.

Internal Baths.—Douches and injections are for the vagina, womb, nose and ear. The water may be either clear or medicated and either warm or hot—sometimes very hot. The ordinary temperature is from 110 to 115 degrees. Various antiseptics and medicines are used, such as carbolic acid, listerine, glyco-thymoline, witch hazel, calendula, hydrastis, tannin, etc.

Enemas are injections into the rectum. These are used to destroy worms and germs and also for bleeding, diarrhoea, gas, soothing purposes and to produce a movement of the bowels. They are sometimes given for nourishment when the patient is unable to eat and are then called enematas. You need a bed pan and either a fountain or a bulb syringe. A hard rubber one holding from one-half ounce to an ounce should be used for babies. The solutions used are warm water, soap and water or oil for the bowels. Medicated water may be used as directed for other troubles.

VENTILATION AND TEMPERATURE OF SICK ROOM.

Fresh air and sunlight are necessary in the sick room. They are antiseptic and health giving. Any room can easily be ventilated. If the patient cannot stand to have the window open continually it can be opened frequently. The draught should not be over the patient. Cover the sick one and keep the cover up from the head so that he may breathe. If the bed is near the window place a screen or quilt on a high chair to keep the draught from the patient. Keep the arms and body under the cover and cover the head with a big handkerchief or cover up entirely as before directed while the room is being thoroughly ventilated with the windows open. The air in a room should never smell bad. Ventilate often or have continuous ven-

tilation if possible. For continuous ventilation raise the lower sash of a window a few inches and put a board in the opening. The air then enters the room at the bottom of the upper sash or between the two sashes and no draught is created. The temperature should vary for different diseases and different persons. Usually it should be from 68 to 72 degrees.

THE TEMPERATURE, PULSE AND RESPIRATION OF THE PATIENT.

The normal temperature is 98 6/10 degrees Fahrenheit. In infants it is higher. The temperature should be taken in the mouth under the tongue and with the lips closed. It may also be taken in the arm pit with the arm close to the side but this is not as true a way. It may also be taken in the rectum. When taken in the mouth the patient must not have recently had anything either hot or cold in the mouth. Before taking the temperature shake the thermometer down to 95 or 96 degrees. It should remain in the mouth from one to ten minutes. The thermometer will need to be kept in the rectum longer than in the mouth. If taken in the arm pit the temperature will be from 3/10 to 1/2 a degree lower. Keep the thermometer clean but do not put it into hot water.

The normal pulse is 70 to 74 per minute. It varies in different persons.

The respiration is usually about 18 times a minute; children, 20 to 24; babes, 24 to 30.

INFECTIOUS AND CONTAGIOUS DISEASES.

Care to be Taken.—A contagious disease is one which can be communicated by coming in contact with or near to the patient, his clothing, etc. Scarlet fever, measles, small-pox and diphtheria are examples. An infectious disease is one caused by the entrance into the body of disease-bearing (pathogenic) organisms. Typhoid fever is such a disease. In infectious and contagious diseases the feces, urine and sputum should always be received in disinfecting material which is placed in the vessels. Linen and utensils used by the patient and the nurse should be disinfected. Articles taken from the bed of such a patient should be immediately put into a pail or vessel containing a disinfecting water and should then be carried to a disinfecting room. The attendants should be very careful. I once had a nurse attending a typhoid case who was very careless and finally took the disease and came near dying. It pays to be careful.

The nurse should never leave the room without washing her face and hands in a bichloride of mercury solution and she should put on a disinfected sheet and hood. When attending to the patient she should be careful not to get any of the discharges upon her hands or face or in the eyes or mouth or on any other part of her person. Frequently in diphtheria the patient coughs and if care is not taken some of the discharge may get into her eyes and mouth. When irrigating such a patient's throat glasses should be used to protect the eyes of the nurse and gauze should be tied over the mouth. Do not put your hands to your mouth, face or eyes. Similar care must be exercised in scarlet fever and small-pox and the doctor's directions thoroughly carried out.

Disinfection is done by the legal authorities after the patient has completely recovered. Any one having a contagious disease in the house and not having a doctor must notify the health officer of the fact in order to comply with the requirements of the law. The house is then quarantined, a card placed in plain sight and orders given as to the extent of the quarantine. These must be obeyed. The nurse is of great help in case of a contagious disease but she can do even more in case of infectious diseases such as typhoid fever.

Isolation and Disinfection in Contagious Diseases.—As soon as any one in a family has a contagious disease like diphtheria, scarlet fever or small-pox, that person should immediately be placed in a pleasant, sunny room with all clothing, rugs, carpets, upholstered chairs and unnecessary furniture removed, keeping only such furniture and bedding as may be needed. It is well to do this even before the disease has been pronounced contagious. In this way other members of the family may be saved from the disease. The nurse should not mingle with the family. Of course nothing must be removed from the patient's room without being thoroughly disinfected.

Dishes.—Place dishes used by the patient in a metallic vessel containing water. Cover this vessel with a sheet wrung out of a disinfectant and place outside the door of the isolated room. The vessel should be removed by an outside party once in twenty-four hours to the kitchen stove and its contents boiled for thirty minutes in the same vessel. Unused food should be put into a covered pail and burned. All this is to be done by one outside of the sick room.

Bed Linen, Towels, Etc.—These should be removed to the kitchen and boiled in the water in which they were carried there or they should be carried to the kitchen in a sheet wet with a disinfectant fluid and put into a boiler and boiled for one-half hour.

Urine and Feces.—These should be received in a vessel containing a disinfectant such as carbolic acid or copperas, 1 part to 20 parts water. After the vessel has been used add a quantity of the disinfecting fluid equal to the discharges, mix the two thoroughly, cover and set aside for one-half hour and then empty into the closet. Also keep a copperas disinfectant in the bed pan when not in use. Rinse in hot water before using and then put in necessary solution.

Spitting Cups and Gauze Handkerchiefs.—In these diseases spitting cups should be used. Nose discharges should be caught in gauze and burned immediately in diphtheria cases or they should be thrown into a covered cup containing a disinfectant and soon burned.

GENERAL DIRECTIONS FOR NURSING VARIOUS DISEASES.

The Giving of Medicines.—Medicines should always be given regularly unless the patient is in a refreshing sleep. Use clean glasses and spoons. Cover the glasses and keep in a cool place away from patient. Never cover with newspaper and never use the same spoon for two different medicines.

Feeding.—This is an important part in the treatment of disease. Usually the best food is milk and white of eggs or foods made with them. In diseases of the stomach, liver, bowels, kidneys and bladder the food is of supreme importance. No case of typhoid fever can be treated intelligently without paying particular attention to the diet. Better eat too little than too

much. Good pure milk is usually safe when given often and in small quantities. Then there are the food formulas, soups, gruels, teas, etc., some of which may be used.

Inflammations.—There is inflammation in injuries and in inflammatory diseases like sore throat, appendicitis, inflammatory rheumatism, pneumonia, etc. Hot water bags are helpful when applied to the afflicted parts for ear and throat troubles, pleurisy, cramps, etc. They are also frequently good in neuritis and sciatica. Hot water applications are sometimes good for appendicitis but in this disease ice is generally better. Poultices are of many kinds and are often used. The hot water bag frequently takes their place. Bread and milk, mustard and flaxseed are used mostly. Rubber ice bags are frequently used in appendicitis and brain troubles such as congestion and sunstroke.

Antiphlogistine and other preparations of this kind are now frequently used in inflammatory troubles such as pneumonia, rheumatism, etc. They are frequently of value.

How and When to Make a Person Sweat.—The first thing to do in colds, inflammation, sore throat, quinsy, tonsilitis, bronchitis, laryngitis, pleurisy, pneumonia, grip, congestion of the lungs, lumbago or sciatica, is to cause sweating either with medicines, teas or external means. In promoting sweating you equalize the circulation and relieve the congestion. Internally, teas such as ginger, boneset, horehound, crawleyroot, Virginia snake-root, sage, elder blossom, dwarf elder, blessed thistle, spruce pine, flaxseed, catnip or slippery elm are good. Hot lemonade will also cause one to sweat freely. While taking hot drinks a hot mustard foot bath will help. Directions for making these teas will be found elsewhere in the book. Externally, apply heat and moisture from bottles of hot water or a hot water bag. Hot fomentations are also good.

Corn Sweat.—One of the best ways of causing profuse sweating is by the aid of ears of corn and is known as the "corn sweat." Put 20 ears of corn into a boiler of hot water, boil thoroughly for half an hour or until the boiled-corn smell is noticed; then take them out and wrap in five large towels using four ears for each towel. Put an ear in the end of a towel, give one or two wraps to cover it then put in another ear in the same way till you have a pack of four ears. Make the other four packs in the same way. Put one pack at the feet, two at the hips (one on each side) and one under each arm and then cover the patient up to the neck and stay by the bed and hold the covers there if necessary. In a short time the patient will feel uncomfortable from the heat but soon there will be moisture and comfort. This sweat is not especially debilitating. The patient will sweat for a few hours and then the sweating will gradually decrease when you should quickly give a warm sponge bath over the entire body. Be careful not to let the patient take cold. Put a new night dress on the patient and well-aired bedding on the bed. If given in time the corn sweat will break up many diseases. It is also good in diseases where the system has become clogged. It must then be given carefully or it will weaken the patient. In such cases give stimulants.

In giving the full sweat the packs of corn are not to be taken away while they are still hot but are to be allowed to cool gradually and then they may be taken away without stopping the sweating too suddenly. Should the full sweat not be desired you can first take the packs from under the

arms and after awhile from the hips and then later from the feet. In this way the sweating is not checked suddenly.

Bronchitis or Croup Tent.—This is made by throwing over the bed a large sheet which is held several feet above the patient by means of four broomsticks or poles which are tied, one to each corner of the bed. You can decorate this tent and make it attractive for the child if you wish. Into this tent, at the foot of the bed, may be discharged a small quantity of steam such as is given off from an ordinary kettle of water which is kept constantly boiling. This is very good for sore throat, quinsy, croup, bronchitis, asthma, whooping cough, etc.

Appendicitis, Peritonitis and Other Pains in the Abdomen.—The ice bag is frequently used for appendicitis. Sometimes hot cloths relieve the pain. The covers should not rest upon the patient with inflammations in this region. Have barrel hoops sawed in two and make a frame to support the bedding. Especially in peritonitis does the bedding hurt the patient. Patients must be kept quiet and must pass urine and feces in a bed pan. The food must be liquid and small in quantity. Water is generally allowed. Pain in the bowels when not caused by disease is frequently relieved by rubbing and massaging. Rub on sweet oil or apply cloths wrung out of hot water with a little turpentine in it. Gas colic is frequently relieved in this way. Gas in the stomach is relieved by simple remedies such as soda, ginger, peppermint, hot water, catnip tea and hot brandy or whisky. Enemas are also good.

Bronchitis, Pleurisy and Pneumonia.—The temperature and ventilation of the room should be carefully looked after. Do not cover too thickly; just enough to keep the patient warm. If poultices are used see that they are warm and moist. Do not wet the patient with them. They can be kept in place with adhesive plaster. Do little talking in such cases as it is usually hard enough for the patient to breathe. Keep visitors, especially gloomy ones, out of the room. Aid in raising the patient when he coughs and wipe the mucus from his lips. Give the food as regularly as the medicine. Tell the doctor all the bad and all the good symptoms occurring between his visits but do not tell the bad symptoms to or before the patient. Keep a cheerful countenance and do not scold if patients are troublesome and cross. Remember they are suffering. Have the patient pass urine at least four times a day, and use the bed pan at such times.

Camphor and lard are frequently rubbed on the chest of children with lung and bronchial troubles and a cotton jacket is often worn. When poultices are taken off cover the parts with warm dry flannels. Ice bags must be carefully used as some people cannot stand them. In these diseases you cannot work by set rules but must meet the emergencies as they arise.

Sore Throat.—Apply cold applications to the throat or tonsils at the beginning and perhaps hot ones later. The application of fat salted pork is also good. Make a gargle of some simple remedy like salt, sage, vinegar, pepper or hot water. Always keep the mouth and teeth clean. Take plenty of good cold water; a little at a time but frequently.

Lumbago, Sciatica and Inflammatory Rheumatism.—In these diseases quiet is necessary. Applications of moist heat are frequently helpful. Mustard plasters or a fly blister along the region of the sciatic nerve are good in some cases. A person with inflammatory rheumatism needs lots of care for the pain is very great. Sometimes the pain in the joints is eased by bath-

ing with hot applications and in other cases the joints need to be covered with cotton. The arrangement of pillows to the comfort of a rheumatic patient is an art that should and with practice and patience can be learned by all. If you have no patience you had better not nurse such a case.

Nervous Prostration and Hysteria.—What has been said above regarding patience applies also in case of nervous prostration. Very few nurses are of much good in these cases because they do not sympathize with the patient who is in terrible distress. Things which are unreal to a person in health are real to the patient and such a patient needs lots of encouragement constantly and in ever increasing doses. Encouragement and rest with a little medicine and proper food will effect a cure. Nurses must also remember that hysteria is a disease and not a whim to be sneezed at. No nurse should make fun of a patient.

Dysentery and Diarrhea.—In these cases it is a good thing to give something at the beginning to move the bowels. Castor oil, salts or spiced syrup of rhubarb are good. In these diseases there is generally irritating material in the bowels and by giving a laxative you will get rid of it and frequently stop the bowel trouble. A $\frac{1}{4}$ grain tablet of calomel every hour until the bowels move freely is also good but either castor oil or salts is almost always at hand.

Measles.—Special care should be taken of the eyes for they are weak and reading or too much light will ruin them. The patient should remain in a darkened room and should not use the eyes much until sometime after he has recovered from the disease. Do not take cold. Sweating can be produced by drinking hot tea or hot water and even by drinking cold water frequently and in small quantities.

Scarlet Fever.—Always keep the patient warm and comfortable and put even the lightest case to bed. Be careful not to let the patient take cold or the kidneys will become diseased. Deafness is often the result of scarlet fever. Above all things do not let the patient take cold.

Typhoid Fever.—In this disease any good nurse can do much good. It is a long continued disease. There should be regular feeding and attention paid to the cleanliness of the patient, to the stools, urine and sputum. The body must be sponged when necessary. The patient must be kept quiet in bed; the arranging and re-arranging of the bed clothes and pillows must be carefully attended to. In typhoid the patient must never get up to stool or for any other purpose. The intestines are very thin, ulcerated and sore and may easily be ruptured or perforated.

Headache and Neuralgia.—For these a sensible nurse can do a great deal of good. A mustard plaster on the back of the neck relieves a great many headaches and neuralgias. Hot or cold cloths, dry or wet, are good in many cases. The hot water bottle may be applied to the back of the neck for congestive headaches. The ice bag on top of the head is good for congestive headaches and for brain diseases. Rubbing the head, forehead, temples and the back of the neck often helps and produces sleep. Rubbing with camphor or ammonia water is good in some cases. All should be done very gently, quietly and sympathetically and usually in a shaded quiet room.

Eczema.—Hot dry applications such as a hot salt bag, or hot moist applications such as hops and vinegar are excellent. Use a bread and milk poultice with a little laudanum in it for adults. The hot water bottle is good and hot bran will be found effective when applied either dry or moist.

CARE OF BODY AFTER DEATH.

As soon as the patient has stopped breathing and death is certain, straighten the limbs and place the arms by the side or across the chest as desired. Close the eyelids and keep them closed either with your fingers or by placing something upon them. If false teeth have been worn they should be placed in the mouth soon after death before the jaws have set. Then close the mouth and tie a handkerchief under the jaw after first putting a pad under the jaw. Tie the handkerchief on top of the head, tight enough to make the mouth close and look natural. Comb and, if a woman, braid the hair; also wash and dress the body if so desired and at the same time change the bed linen. Tie knees and ankles together with a broad bandage. You can also bind the hands in place if necessary. Make the body look natural and comfortable and cover with a sheet. If the body is clean I never could see the use of washing it after death. It seems a needless exposure and an unnecessary annoyance to the relatives. Call an undertaker but do not let him use an injection until death is an absolute certainty. If you are not certain of death keep the body until signs of decay are seen before you allow any injection or preparation to be used. Not many people have been buried alive but some have been, so keep your friends till death is certain. Displacement of the body or extremities sometimes occurs after burial. This is generally due to a sudden contraction of the muscles. It does not often occur but such cases are on record. That person was dead but simply had an "after death" contraction. I always advise the undertaker to delay as long as possible before preparing the body and in cold weather I can see no necessity for using any preparation on the body.

ACCIDENTS AND EMERGENCIES.

"What to Do" and "What Not to Do."

APOPLEXY.—(See General Treatment.) Place patient in lying position with head higher than body, loosen clothing and apply cold water to head. Put feet in hot mustard water. If tongue draws back put towel or handkerchief over it and keep it forward. Keep bowels open and draw urine if necessary. Patient must remain quiet.

ASPHYXIA OR SUFFOCATION.—Use artificial respiration as for drowning. (See "Drowning.")

BANDAGING.—(See Chapter Following.)

BITES OF SNAKES.—If on a limb tie a rope or handkerchief around the limb just above the wound. Cleanse the wound at once. Suck the wound; if the poison is swallowed accidentally it is not very dangerous. Cut the wound open so the blood will flow freely then fill it with salt; or, if you have it, use permanganate of potash. Give full doses of this drug hypodermically about the wound. It should be diluted three-fourths with water and should be followed with full doses of brandy or whisky. Tie tight above wound with ligature and open wound thoroughly.

PEOPLE'S HOME REMEDIES.—

1. **Plantain Leaves.**—Suck out the poison and after cutting the wound

open apply bruised plantain leaves and give a teaspoonful of the juice from the bruised leaves every hour.

2. **Baking Soda.**—Cut open the wound, suck out the poison and apply moistened baking soda. Keep the parts wet for several hours.

3. **Lime.**—Mix two tablespoonfuls of chloride of lime with one-half pint of water. Bathe the wound promptly and freely.

4. **Turpentine.**—Turn a bottle of turpentine upside down over the snake bite and hold it there until relief is obtained.

5. **Chicken Entrails.**—Kill a chicken and while warm cut open and lay upon wound, entrails and all, and it will draw out the poison.

Physician's Remark.—This draws well. It had better be applied after the wound has been sucked and cauterized.

6. **Tobacco and Salt.**—Moisten some tobacco and salt and tie on wound as a poultice.

7. **Onions and Salt.**—Apply a poultice of onions and salt.

8. **Salt and Lamp Oil.**—Apply table salt and lamp oil.

Note.—Use the above after sucking and cauterizing.

9. **Sucking.**—Suck the wound.

BITES OF RATTLE-SNAKES.—Cleanse and suck the wound and use permanganate of potash as directed under "Snake Bites" above. Cauterize by applying a red hot iron.

PEOPLE'S HOME REMEDIES.—

1. **Salt.**—Apply salt at once.

2. **Soda and Salt.**—Bandage above the wound, rub the swelling downward, poultice with soda and alternately keep the wound in fresh soda and salt water, changing frequently. This receipt is from a person who has had experience.

BITES AND STINGS OF INSECTS.—For stings of hornets or bees pull out the sting and apply peroxide of hydrogen. Vinegar either pure or diluted is good. Apply a mud poultice made of clay. For mosquito bites apply phenol, one part, mixed with water from 50 to 100 parts.

PEOPLE'S HOME REMEDIES.—

1. **Witch Hazel.**—Freely applied this gives quick relief in cases of bites or stings of mosquitoes, spiders, snakes, bees or wasps.

2. **Ammonia or Salt.**—For bites and stings of insects bathe the parts frequently with either ammonia water or salt and water.

Physician's Note.—Ammonia destroys the local poison by blistering the part, thus drawing out the fluid poison.

3. **Olive Oil.**—Apply olive oil to the parts.

4. **Clay.**—Wet clay earth or black mud applied to bites and stings is one of the best remedies and one that is easily obtained.

Physician's Remark.—I know this to be good. There is sometimes danger of infection but often other remedies are not at hand.

5. **Arnica.**—Tincture of arnica is an old and tried remedy.

6. **Plantain Leaves.**—In case of a bad bite or sting of an insect or a snake apply a poultice made of common plantain leaves. This is one of the very best remedies and one does not generally have to look far to find plantain as all are aware who have tried to keep it out of the lawns and gardens.

Physician's Remarks.—Plantain has quite an action on the skin. It is

also good for ivy poisoning, burns, scalds and bruises. Pound the fresh leaves to a paste and apply.

7. **Catnip and Plantain.**—Another lady writes that for bites and stings of all kinds of insects she applies bruised catnip and plantain leaves to the parts and gives a teaspoonful of the juice of the plantain every hour..

8. **Salt and Soda.**—Table salt and baking soda, in equal parts, applied to spider bites will relieve the pain and stop the swelling.

Physician's Remark.—Salt draws and soda soothes.

9. **Onion.**—For bites and stings apply a piece of raw onion to the wound. Change the piece of onion every ten minutes and relief will soon be obtained. One physician says he uses no other remedy.

Physician's Remark.—Raw onion is irritating and stimulating to the skin and causes the skin to discharge a fluid thus ridding the part of the local poison. Keep on for three or four hours.

10. **Baking Soda.**—Apply baking soda to the affected parts for stings.

11. **Clay.**—For stings apply a poultice of clay.

12. **Coal Oil.**—In case of stings apply coal oil freely.

BITES OF DOGS.—See article on "Hydrophobia" in general department.

BITES FROM CATS.—See "Hydrophobia."

PEOPLE'S HOME REMEDIES.—

1. For bites from cats bathe the parts bitten with extract of witch hazel or if badly bitten wet cotton cloth in the same and bind on and keep parts wet. I have found witch hazel will kill all such poison.

Physician's Remark.—Better kill the cat.

BLEEDING OR HEMORRHAGE.—(For Bleeding from Nose see "Nose Bleed.") Apply alum locally. Eat cinnamon for uterine hemorrhage of the oozing kind or use tannic acid diluted or white oak bark tea locally as a douche. Common salt is good for light bleeding. If the bleeding is from an artery and comes in spurts tie a rope or handkerchief around the limb between the wound and heart. Put a stick under the rope or handkerchief and twist tight. If the bleeding is from veins put the rope or handkerchief on the side of the wound farthest from the heart. If a finger is cut tie a cord about it tightly above the wound and press on the artery with the fingers. In severe bleeding place the patient flat on the ground and have him smell of camphor or ammonia. If the hemorrhage is from the lungs the blood will be a bright red and be mixed with air and consequently frothy. If the blood is from the stomach it is more likely to be of a dark color. In either case have the patient lie flat and remain quiet. Give strong salt water and give the patient ice in the mouth. If the bleeding is from the stomach apply cloths wrung out of cold water to the stomach.

PEOPLE'S HOME REMEDIES.—

1. **Vinegar.**—For bleeding from the stomach give two teaspoonfuls of vinegar or a little cold water every half hour.

Physician's Remark.—Vinegar is slightly astringent.

2. **Lemon Juice.**—To stop bleeding from the stomach an excellent remedy is two teaspoonfuls of lemon juice in some cold water. Repeat this every half hour until the bleeding stops.

3. **Ice.**—Give the patient a little cracked ice until the bleeding from the stomach is controlled.

4. **Sage and Honey.**—To stop vomiting of blood give three teaspoonfuls of sage juice mixed with a little honey. Repeat in fifteen minutes if necessary.

5. **Salt.**—Small quantities of salt will stop bleeding from the stomach or lungs. A teaspoonful or two is generally sufficient.

6. **Alum.**—Pulverized alum dissolved in water is good for bleeding from the stomach.

7. **Cranesbill.**—Powdered cranesbill applied to the parts and covered with a compress of cotton is good for bleeding and for ulcers.

8. **Flour and Salt.**—A mixture of flour and salt in equal parts bound upon the cut will stop bleeding.

Physician's Remarks.—Salt is an astringent and therefore contracts the blood vessels thus keeping the part from being congested or over crowded with blood. In this way it stops bleeding and also helps to cure inflamed eyes.

9. **Black Tea.**—Finely powdered black tea bound upon the cut is one of the very best remedies used by many surgeons. Where a doctor is not at hand many lives would be saved if this remedy were more generally known.

Physician's Remark.—Tea is an astringent and also has a soothing effect.

10. **Rosin.**—Bind some finely powdered rosin upon the cut. This is a very effective remedy.

11. **Charcoal.**—Take some charcoal made by burning rags, put it in the wound and the bleeding will stop. If a person be away from home with no aid at hand and the cut is severe he should not hesitate to burn a handkerchief or even a part of his clothing. This treatment should be more generally known especially by those who are alone in the woods using axes.

12. **Alum Water.**—If the bleeding is from the cavity of an extracted tooth pack the part with cotton wet in alum water.

Physician's Remarks.—Alum is an astringent and contracts the blood vessels so that less blood goes to that part.

13. **Cobwebs or Puff Balls.**—Either cobwebs or puff balls will stop bleeding and should be used if nothing else is at hand though care should be taken that they be not mixed with filth of any kind or poisoning might be the result.

14. **Wood Ashes.**—Wood ashes bound upon the cut will stop bleeding. It is also effective for a horse that has been cut in a barbed wire fence.

15. **Brown Sugar.**—If the cut is slight bind some brown sugar upon the parts or apply wet brown paper.

16. **Sole Leather.**—Shave the flesh side of sole leather and bind upon the cut.

17. **Gunpowder.**—Put some gunpowder on a piece of cotton batting and bind upon the cut.

18. **Copperas and Alum.**—Styptic powder is composed of one ounce of copperas and one ounce of alum. Each article should be pulverized and mixed. Put on a shovel, burn to a red heat and then dry to a red mixture. Pulverize finely and bottle for use. Sprinkle on the wound in the dry form. There is nothing better.

19. **Lamp Oil.**—Pour some lamp oil upon the wound.

BONES, BROKEN AND FRACTURED.—(See Chapter on "Bandaging" which follows.)

BLISTERS AND BLOOD BLISTERS.—

PEOPLE'S HOME REMEDIES.—

1. **Warm Water.**—Bathe the blistered parts frequently in warm water. This is much better than drawing a thread through them as many do.

2. **Tallow.**—Make a salve by dropping the tallow from a lighted candle into a little gin. Apply this at night before going to bed if the blisters are on the hands or feet.

3. **Drilling Nail.**—If the finger is bruised causing blood blister under the nail it should at once be drilled with some sharp pointed instrument so as to let the blood escape. This will give immediate relief while otherwise it might become quite painful.

4. **Sweet Oil, Beeswax and Turpentine.**—To prevent the forming of a blister apply immediately the following salve to the bruised parts. Take equal parts of sweet oil, beeswax and turpentine; melt the wax and oil together and when pretty cool add the turpentine and stir until cold. Spread on a cloth and apply. This is excellent for bruises or scalds.

5. **Poultice of Cabbage Leaves.**—An old remedy in use among the Romans for blisters was a poultice of cabbage leaves. Put them into warm water to soften and apply while warm. This remedy is still used by many nurses in our large hospitals.

Physician's Remark.—Cabbage leaves have a soothing effect somewhat like lettuce.

BRUISES AND SLIGHT CUTS.—Apply arnica freely. Lead water diluted with four parts of water may be applied locally if the skin is not broken. Another good application is laudanum, 1 part; lead water, 4 parts and water, 16 parts. For severe bruises I always give arnica internally, in 5-drop doses every three hours.

PEOPLE'S HOME REMEDIES.—

1. **Witch Hazel.**—Bathe the parts freely with witch hazel.

2. **Arnica.**—Take one part tincture of arnica and six parts water. Wet a cloth with the liquid and apply over the bruise.

3. **Mullein Leaves.**—Fomentations of mullein leaves are excellent for bruises and swellings on either man or beast. (Fomentations are explained at beginning of Herb Department.)

4. **Cranesbill.**—An excellent thing for cuts or wounds where the skin is rubbed off is cranesbill leaves bruised and applied to the parts.

5. **Rosin.**—You will find nothing better for a cut than powdered rosin. Put a little on the injured part, wrap with a soft cloth and keep it wet with water.

6. **Alum Water.**—"Cuts or bruises will quickly heal if bound up with a cloth wet with alum water," writes a lady from Minnesota.

7. **Salt Pork.**—If you have stepped on a nail bind a piece of the rind of salt pork on the part and keep quiet till it heals.

Physician's Remark.—First put on a hot bread and milk poultice, change frequently and keep on until the wound bleeds well then put on the salt pork.

8. **Hot Water.**—A treatment used extensively in hospitals is to dip

pieces of cotton batting into very hot water and apply to cuts, bruises and sprains.

9. **Cold Water.**—Bathe the bruised parts thoroughly with cold water.

10. **Chloroform Liniment for Bruises.**—Mix one ounce of chloroform, one ounce of ammonia, one ounce of laudanum and one ounce of sweet oil. Bathe the parts well To be shaken well before using. A lady in Bethany, W. Va. says she has used this chloroform liniment for years and always with good results.

11. **Smoking.**—Take live coals, burn woolen cloths upon them with a small pinch of sugar, hold bruised parts over the smoke. Will take all soreness away. A lady living at Garrettsville, Ohio, says she has used this many times with excellent results.

12. **Sugar and Camphor.**—Brown sugar and spirits of camphor tied on, or a poultice of comfrey roots, will remove the blueness of a bruise.

13. **Smartweed Poultice.**—Steep some smartweed, thicken with wheat flour and make into a poultice. A lady living at Independence, Iowa, says her husband was very badly bruised in a run-away and that the application of this smartweed tea made a new man of him.

14. **Hot Water.**—Another lady who speaks from experience says that hot water is the best thing that can be used to heal a sprain or bruise. The wounded part should be placed in water as hot as can be borne for 15 minutes and in all probability the pain will disappear. Hot water applied by means of cloths is a sovereign remedy for neuralgia or pleurisy pains.

BURNS AND SCALDS.—Lime water with equal parts of either linseed oil or olive oil is very good. For small burns washing soda is good. The application of either cold cream, vaseline or pineoline is also very good. If the skin is not broken very much dust on some boric acid powder and then apply either vaseline or pineoline. Pineoline is preferable. To make bees-wax ointment take 6 ounces of benzoated lard, 1 ounce of yellow bees-wax and 20 grains of salicylic acid. Melt the wax in a tin cup then add the lard. When all is melted remove from the fire and stir till cold. Then add the salicylic acid and continue stirring until cold. It makes a varnish over the burned parts that excludes the air and sheds moisture.

PEOPLE'S HOME REMEDIES.—

1. **Wood Soot and Lard.**—Apply wood-soot ointment which is made by mixing an ounce of finely powdered wood-soot with four ounces of lard. It should be spread on cotton batting and applied to burns, scald-head or other diseases of the skin.

Physician's Remark.—This acts as a local sedative and quiets pain.

2. **Lime Water and Linseed Oil.**—Apply equal parts of lime water and linseed oil to the burns or scalded parts and cover with raw cotton. If desired, one part of carbolic acid may be added to fifty parts of the liquid. Lime water alone is good.

Physician's Remark.—This forms a covering thus keeping the air from the burn.

3. **Castile Soap.**—A nice application for burns or scalds is castile soap scraped and mixed with water till it makes a thick lather. Spread this thickly on a piece of linen or cotton cloth and apply to the burned surface.

4. **Flour.**—Flour sprinkled on the burn or raw cotton spread out thin are good applications.

5. **Baking Soda.**—A fine thing for burns and scalds is two tablespoonfuls of baking soda dissolved in a pint of water. Wet cotton cloths in this solution and apply to the parts. Keep wet and well wrapped up.

6. **Alum Water.**—Dissolve two ounces of alum in a pint of water. Saturate cotton cloths in this alum water and apply to the burn. Keep well wrapped up and the pain will soon be relieved and healing commenced.

7. **Cosmoline.**—Dress the burned or scalded parts with cosmoline and cover with one thickness of cotton cloth; then, to keep out the air, wrap the whole with absorbent cotton. A number of persons write telling of the excellent results obtained from the use of this remedy.

8. **White of Egg.**—Perhaps the most soothing application for burns or scalds is the white of an egg. It thoroughly excludes the air and stops the smarting pain and is always at hand for immediate use.

Physician's Remark.—This will be found to be an excellent application for burns and scalds.

9. **Alum, Lard and Eggs.**—Add a dram of finely powdered alum to a teacupful of lard or vaseline and mix thoroughly with the whites of two eggs. Spread on a cloth and apply. This is especially valuable where the skin has been burned from a large surface. It prevents inflammation and gives almost instant relief.

10. **Charcoal.**—Finely powdered charcoal is excellent when applied to burns.

11. **Scraped Potato.**—A poultice of scraped raw potatoes is a fine application for burns or scalds. Powdered charcoal may be mixed with the potato with excellent results.

12. **Glycerine or Sweet Oil.**—Apply either glycerine or sweet oil.

13. **Alcohol.**—For burns from carbolic acid apply alcohol. If applied immediately the acid will not even make the flesh red.

14. **Olive Oil and Camphor Gum.**—Take some olive oil and put in all the camphor gum it will cut. Pour a generous quantity upon the affected parts and bind up in clean linen. Apply fresh every day.

15. **White of Eggs and Lard.**—Beat the white of eggs to a froth and then beat in some fresh lard. Apply and bind up with clean linen.

Physician's Remark.—This forms a coating and keeps the air out.

16. **Vaseline and Carbolic Acid.**—Apply vaseline plentifully, cover with absorbent cotton and then wrap with a cloth. For serious burns bathe twice a day by dipping a clean cloth into warm water with a little carbolic acid in it but do not let the cloth touch the burn. Only let the water drip on the wound and then apply the vaseline fresh, immediately after the bathing each time, until well. It is a sure cure.

17. **Gum Arabic and Carbolic Acid.**—Take $1\frac{1}{2}$ ounces of gum arabic, 4 or 5 drops of carbolic acid and 1 pint of rain water. Boil the water and put the gum arabic into it to dissolve and when cold add the carbolic acid. Apply to burns and scalds.

Physician's Remark.—This forms a good coating. The intent in treating burns and scalds is to apply something soft to the part to exclude the air. Oily, greasy substances are generally good and are generally at hand. Cream, vaseline and lard are good.

18. **Boracic Acid.**—Apply powdered boracic acid dry to the parts. Keep the parts dry with it all the time. Just for a small place on the hands apply the white of an egg. It will not blister and keeps the air away. A lady writes that her little girl fell on a stove and burned her face and hands terribly. She applied the boracic acid as above and not even a scar was left.

19. **Lard.**—Spread lard on a clean cloth and bind on the affected parts. The lard must not be salted. This is a simple and good remedy. The lard should be spread on quite thick.

20. **Flour and Sweet Oil.**—Cover immediately with flour and then put on sweet oil and bandage quickly.

Physician's Remark.—This is a good sensible remedy and is practical for you nearly always have it at hand.

CHOKING.—For choking from a foreign body, such as food, slap hard on the person's back between the shoulders. If it be a small child and cannot otherwise be relieved take hold of the heels and turn it upside down and shake a little. Put your finger in the throat, tickle and cause vomiting. Or you can take the rubber tube from a syringe after the hard rubber part has been taken off and put this tube down the throat. This will cause vomiting or will push the object down the gullet and allow the person to breathe. Of course if the object is in the windpipe you must not push it down.

PEOPLE'S HOME REMEDIES.—

1. **How to Treat for Choking.**—Seize the patient by the heels, hold him head downwards and strike sudden blows between the shoulders. This treatment has saved many a child's life and every mother and nurse should remember it in case of emergency where a doctor is not at hand.

2. **Raw Egg.**—Break an egg into a cup and let the patient swallow it at a gulp.

3. **Blowing into Ear.**—A naval surgeon writes that any foreign body which is lodged in the throat can be removed by blowing forcibly into the ear.

4. **Pressing on Tongue.**—Put the finger far back in the mouth and press upon the back part of the tongue to cause vomiting.

5. **Potato or Bread.**—Have the patient swallow a large piece of potato or bread.

6. **Mustard Water.**—Give an emetic such as mustard water.

CONVULSIONS OR SPASMS.—Keep the child perfectly quiet and put ice or cold water cloths on the head. Put feet in hot mustard water and wrap entire body in towels which have been dipped in warm mustard water. Use two heaping tablespoonfuls of mustard to a quart of warm water. If there is undigested food in the child's stomach produce vomiting by tickling the throat. Put the handle of a knife or fork in the child's mouth to prevent its biting your finger or its own tongue. If there is anything in the bowels give a large injection. If the convulsions continue till the face is very pale, the pulse weak, the feet and hands cold and the nails and lips blue—then the hot bath must be resorted to. Have the water at about 106 degrees or put your arm in the water to the elbow. The water should then feel warm but not uncomfortable. It is well to add half a cup of mustard to the bath. Excepting the head put the child's entire body in the water. To prevent the return of the convulsions give the following internally: one-half dram of bromide of potash, 15 grains of chloral hydrate and 2 ounces of simple

syrup. Mix and shake thoroughly and give a teaspoonful every hour while the child is nervous or feverish. This dose is for a child a year old.

PEOPLE'S HOME REMEDIES.—

1. **Warm Mustard Water.**—If the convulsions are caused by over loading the stomach, vomiting should be induced by giving warm water or tickling the throat. If the convulsions are slight perhaps all that will be found necessary is to put the feet in warm mustard water. In case of severe convulsions the following general treatment has saved hundreds of lives. First put the child in a warm bath as soon as possible and while in the bath, pour a steady stream of cold water upon its head but not from a great height. Continue to pour while the head is hot or until the fit has passed. Keep the child in the warm bath until the convulsions are over which is generally from ten to twenty minutes. When taken from the bath wrap the child immediately in a warm woolen blanket without even stopping to wipe him off. Sometimes it will be found necessary to inject the bowels with warm water to which has been added a tablespoonful of sweet oil and a little of the suds from castile soap. Repeat this till the bowels move. This treatment is probably the very one your doctor would use were he called and in an emergency can be used equally well by the parent. Therefore let this treatment be adopted by every mother who values the life of her child.

Physician's Remark.—This treatment is used by many physicians and can be depended upon. It draws the blood from the head to the extremities and establishes a good general circulation.

2. **Salt and Water.**—Give a teaspoonful of salt and water and put the feet and legs in hot water.

Physician's Remark.—The salt is to cause vomiting.

3. **Mustard Water.**—As soon as the fit comes on dip some cloths into hot mustard water and wrap the child's feet and the lower part of the limbs, leaving the cloths on until the skin is quite red.

4. **Hot Water and Salt.**—The simplest way to bring a child out of a spasm is to put its feet into hot water and force a little salt water into its mouth.

5. **General Treatment.**—Ice water to head and throat, hot water to feet and wrists and as soon as possible put a mustard plaster or poultice to the wrists and soles of the feet. Give an injection of warm soap suds and also a mild laxative.

Physician's Remark.—When the head is too hot cold water will contract the blood vessels and cause less blood to be carried there. Hot water to feet and wrists causes the blood to flow better in the extremities. Mustard aids by increasing the circulation of the skin. When the head and face are red and congested the aim is to get the blood away from the head and increase the circulation in other parts of the body.

6. **Hot Bath.**—As quickly as possible put the patient into as hot a bath as he can stand.

7. **Salt and Mustard Water.**—Teaspoonful of salt put into bath of warm mustard water.

CUTS.—(See "Bruises and Slight Cuts." For severe cuts see "Bleeding.")

CRAMPS.—Externally apply belladonna liniment. Ginger tea is very good for menstrual cramp.

PEOPLE'S HOME REMEDIES.—

1. **Bandaging.**—If the cramp occurs in the leg it can frequently be relieved by tying a cord around the leg above the cramp.

2. **Drawing up Foot.**—To obtain relief from cramps in the calf of the 'leg draw the top of the foot up as closely as possible to the shin and hold it there until the cramping has ceased.

3. **Red Pepper and Whisky.**—Apply red pepper and whisky for cramps in the neck or leg.

4. **Tansy, Hops or Mustard.**—Warm fomentations of tansy, hops, or mustard will relieve cramps in the stomach.

5. **Various Remedies.**—For cramps in the limbs wear eel skin garters. For cramps in stomach make a tea of merwine root and drink the same or take 30 drops of Jamaica ginger diluted with water.

6. **Rhubarb, Cayenne, Etc.**—Take tincture of rhubarb, tincture of cayenne pepper, tincture of opium, spirits of camphor and essence of peppermint; of each equal parts. For an adult give a teaspoonful at a dose every half hour until four doses have been taken.

7. **Hot Applications.**—Apply hot applications.

8. **Mustard Poultices.**—Apply hot cloths. A mustard poultice is very good in some cases.

DISLOCATIONS.—(See chapter on "Bandaging" following.)

DIZZINESS OR VERTIGO.—This is often due to stomach, liver or bowel troubles and rarely to brain disease. Heart troubles, general weakness and poorly fitting glasses are other causes. Vertigo frequently comes from biliousness and constipation and is sometimes due to fermenting food in the stomach and bowels. It is always a good plan to keep the bowels moving regularly one or twice a day. Eat less and do not eat food that disagrees with you. Rich, greasy food is not good for persons suffering with vertigo. (See "Fainting.")

DROWNING.—Remove all dirt, saliva, etc., from the mouth and, pulling the tongue well forward, hold it there with forceps or by means of a cloth passed around it and held by the hand.

Remove clothing, especially from the upper part of the body.

Place the patient on his stomach, stand straddle of him and lift him up by putting your arms around the middle of his body and let his head hang down so the water can run from the lungs out of the mouth.

Turn the patient on his back and place a roll of clothing under the small of his back. Also place something under his shoulders and head.

Use artificial respiration. Stand or kneel above or at the head of the patient, grasp the arms at the elbow and draw them steadily and slowly upward above the head and keep them stretched for a couple of seconds. Then bring the arms down to the sides again and press them firmly for a couple of seconds against the sides of the chest. Repeat these movements regularly from fifteen to twenty times a minute and persevere in them for an hour or even two hours if necessary. An assistant should press on the lower border of the ribs and pit of stomach while the arms are pressed against the sides. Rub the limbs while this is being done. Dash hot and cold water alter-

nately upon the chest. If necessary, put in warm bath while artificial respiration is still continued.

The clothes must be taken off, the tongue drawn out and the mouth cleaned quickly and artificial respiration commenced as soon as possible. After breathing has been established put the patient into a warm bed in a room which is kept well ventilated. For nourishment and as a stimulant inject the bowels with brandy and beef tea. Do not let bystanders crowd about the patient and keep the air from him.

EAR, THINGS IN.—Insects sometimes get into the ear. Pour water as hot as it can be borne into the ear and hold it there for a few minutes. Then turn the head and let the water run into a basin so that you can see whether or not the insect comes out. If foreign bodies are in the ear you can use an ear spoon but it must be used gently. A crochet hook or a small hair pin properly bent may also be used. Do not use force for the ear is very easily injured. If you cannot get the body out easily you should see a doctor.

EPILEPSY.—(See "Fits.")

EYE, THINGS IN.—If under the lower lid pull the lid down and wipe the object off with a smooth cloth. If under the upper lid put the first finger of your left hand in the center of the lid about half an inch from the edge and take hold of the eye wipers with two fingers of the other hand. Pull down and then up over the finger of the left hand thus exposing the inner surface of the lid so that the object may be wiped off. The patient should look at the end of his nose while this is being done. A flaxseed placed in the eye will frequently push the object from under the lid. Another way is to pull the lid down with the fingers and then blow the nose violently. If some foreign object like a piece of steel is lodged in the ball of the eye a doctor will be required to remove it.

PEOPLE'S HOME REMEDIES.—

1. **Removing with Pencil.**—Roll the lid upward over a lead pencil then draw the pencil backward and forward several times. This seldom fails to remove the foreign body.

2. **Blowing Nose.**—With the thumb and finger keep the eye open while blowing the nose vigorously.

3. **Flaxseed.**—One grain of flaxseed put in the eye.

4. **Treatment For.**—Shut the eye and take hold of the upper lid by the lashes, roll the eye around and pull the upper lid down over the lower one and let go.

5. **Immersing in Water.**—To remove dirt from the eye immerse it in cold water and while thus immersed roll and wink the eye till the dirt is worked out.

6. **Olive Oil.**—A celebrated eye specialist of Holland says there is nothing better to remove specks, dirt or lime from the eyes than to pour olive oil into them till all hurtful substances are washed out. This, he says, is painless and seldom fails.

7. **Camel's Hair Brush.**—Cinders and dust may be removed by wetting a small camel's hair brush in water then raising the lid and passing the brush over the eyeball.

FAINTING.—Do not get rattled. Place the patient flat on the back; loosen clothing; give plenty of air; sprinkle water on the face; put camphor,

ammonia or smelling salts to the nose; rub the hands and feet and give brandy or whiskey. Generally the head should be placed low. Do not allow a crowd to gather and shut off the air from the patient. The head and face may be bathed with camphor or cool water. Have the patient remain lying down until the faint feeling is entirely gone. If the fainting is caused by some disease stimulants should be given.

PEOPLE'S HOME REMEDIES.—

1. **Aromatic Spirits of Ammonia.**—Give half a teaspoonful of aromatic spirits of ammonia in a wineglassful of water and you will revive the patient.

2. **General Treatment.**—Lay the patient upon his back and admit plenty of fresh air. The face should be sprinkled with cold water and the arms and legs should be rubbed. Hold spirits of ammonia, camphor or vinegar to the nostrils. As soon as the patient can swallow give a teaspoonful of compound spirits of lavender.

FALLS.—Immediately after a bad fall do not allow the patient to lie down and sleep as there is danger of the blood clotting in the brain and causing death. Keep the patient awake.

PEOPLE'S HOME REMEDIES.—

1. **Salt Water.**—To revive a person who seems stupid from a fall give him salt water to drink. Use a teaspoonful of salt to a pint of water.

FIRE.—(See "Burns and Scalds.") If your clothing is on fire do not run, as this will but fan the fire. Throw a garment such as a shawl, rug, overcoat or piece of carpet around the body and then lie down and roll. This smothers out the flames. Always keep your mouth closed or you will be burned internally. Put soda and sweet oil, linseed oil or some kind of grease on the wounds until care can be given them.

FITS, FALLING FITS OR EPILEPSY.—(For symptoms see General Diseases.) Bromide of potassium is the remedy to be used and should be continued for months and years and should be kept up for three years after the patient is seemingly cured. This should be administered under the supervision of a doctor.

PEOPLE'S HOME REMEDIES.—

1. **Oxide of Zinc.**—A physician who has been very successful in curing epilepsy uses oxide of zinc. It should be taken three times a day. The first eight days the dose is $\frac{1}{2}$ grain. Then take 1 grain doses for the next eight days. Then use $\frac{1}{2}$ grains till cured. The dose seldom has to be increased over $\frac{1}{2}$ grains. It is well while under this treatment to rub the spine twice a day with stramonium ointment.

FRACTURES.—(See chapter on "Bandaging" which follows.)

FREEZING, FROST BITES.—

PEOPLE'S HOME REMEDIES.—

1. **Rubbing with Snow, Witch Hazel, Etc.**—If one has been frozen keep him away from the fire and thaw out the parts slowly. First rub them with snow, then flannel and lastly with the hands, then bathe the parts frequently with witch hazel.

2. **Alum Water.**—Immerse the frozen parts for ten or fifteen minutes in alum water. Use from one-fourth to one-half pound of alum to a gallon of water. (See "Chilblains," under "Skin Diseases.")

HEART TROUBLES.—

Palpitation.—If a person has palpitation after too hearty eating and the stomach seems full, it is difficult to breathe, heart goes too hard and fast and the patient feels almost suffocated but has no valvular heart disease; give a teaspoonful of soda in hot water or peppermint water or hot whiskey or brandy. These will relieve the person by causing the gas to come up. The last two can be used in heart trouble.

Fast Heart.—If any one afflicted with heart trouble has palpitation, the heart beats fast, full and hard and throbs terribly causing hard and labored breathing on account of the lungs being pumped so full of blood, do not smell of camphor, ammonia or nitrite of amyl because they would make the heart beat faster still. Such patients are usually sitting or lying propped up in bed. Give tincture of digitalis, five drops in a little water in a spoon. Put this carefully and slowly into the mouth. Give another dose in ten minutes and another in half an hour, if necessary, then every three to four hours for twelve hours.

Weak Heart.—If there is a slow heart from overdoing or in asthma, grip, etc., have the patient inhale nitrite of amyl, camphor or ammonia and give whiskey or brandy and then if you have them give digitalis or strychnia. In this condition the patient is unable to sit up; perhaps lies partly unconscious; is faint, weak and collapsed; perhaps has a cold sweat and the pulse, which may be fast or slow, is weak and hardly perceptible. If you have nitrite of amyl capsules break one containing three to five minims on a cloth and have the patient inhale it for a few minutes. Or have him inhale camphor or ammonia. At the same time give whiskey or brandy and watch the effects. Do not over-stimulate. The best, surest and most lasting in its effects is the digitalis or strychnia. If the strychnia is used give one dose, 1/60 of a grain, and in half an hour give another dose but never more than two doses. This can be given at the same time with the whiskey, brandy or digitalis. Digitalis, with or without one dose of strychnia, in such a condition and from the causes mentioned, gives the best and most permanent relief. Give five drops at a dose. If nothing else has been given repeat the dose in ten minutes. If something else like the above or strychnia has been given do not repeat the dose in less than an hour and stop the others. Repeat again, if necessary, in an hour or two. (See "Diseases of the Heart" in regular department.)

HEAT STROKE OR SUNSTROKE.—(For symptoms, etc., see regular department.) The treatment must be bold and vigorous. If the temperature is too high it may be reduced by applying ice or cold water. Strip the patient, lay him on a canvas cot if one is handy and then direct a stream of cold water upon his body. Rub actively and vigorously at the same time. This brings the blood to the surface and relieves the internal organs and the head. Rub thoroughly and at the same time constantly apply ice or cold water to the head. In other cases the patient may be put in a tub and the above directions followed. When the temperature falls see that it does not fall too rapidly. Bleed the patient if he is robust and there is evidence of venous engorgement or too much blood in the veins. Then follow with normal salt injection. If constipated give citrate of magnesia in 4 dram doses. If the patient is unconscious give a hypodermic of 1/6 grain of elaterium for the bowels. Give strychnine if necessary to stimulate. Give no alcohol and have patient remain in bed several days.

PEOPLE'S HOME REMEDIES.—

1. **Essence of Ginger.**—Put the patient in a sitting position and pour cold water freely upon the head. Into half a tumbler of water pour two or three teaspoonfuls of essence of ginger and have the patient drink it quickly.

HEMORRHAGE.—(See Bleeding.)

HICCUGH.—This is caused by a spasmodic contraction of the diaphragm by which the air is suddenly drawn in. Give a 1 dram dose of tincture of musk or give ten drops of chloroform internally. Another remedy is composed of spirits of camphor, 1 teaspoonful; tincture of capsicum, 2 to 3 drops; oil of amber, 5 to 10 drops; tincture of valerian, 1 teaspoonful. The whole is to be taken at a dose and repeated if necessary.

PEOPLE'S HOME REMEDIES.—

1. **Nitre.**—Drink from 3 to 5 grains of nitre dissolved in half a tumbler of water.

2. **Chewing.**—Press the fingers tightly into the ears and chew as though you were eating food. This is an old and tried remedy.

3. **Vinegar and Sugar.**—Drink several swallows of well-sweetened vinegar or eat a lump of sugar that has been thoroughly saturated with vinegar.

4. **Lemon Juice and Sugar.**—Drink freely of lemon juice mixed with sugar.

5. **Mustard, Ginger or Soda.**—Drink frequently of hot water containing mustard, ginger or soda.

6. **Drinking Through Towel.**—Put a clean towel over a glass of water and drink water through the towel. This takes the mind from the hiccoughing.

7. **Drinking Water.**—Drink nine or ten small swallows of water without breathing.

8. **Placing Fingers Together.**—Without leaning on anything, see how nearly together you can keep the ends of the small fingers, being very careful never to allow them to touch. This concentrates the mind and seldom fails to effect a cure.

9. **Swallowing.**—Take a drink of cold water or eat a piece of dry bread or something to cause swallowing.

10. **Baking Soda.**—Give a half teaspoonful of common baking soda dissolved in a little water.

11. **Startling.**—Scare or surprise a person with hiccoughs. Speaking suddenly to them often startles them and cures the hiccoughs. Do not adopt this method with a person who has heart trouble.

Physician's Remark.—A number of the above remedies perhaps have no real medical value but they concentrate the mind of the patient upon something besides the hiccough and thus effect a cure.

HYDROPHOBIA.—(See this subject under Infectious Diseases.)

NOSE, BLEEDING FROM.—(Epistaxis.) Usually, bleeding from the nose will stop itself. Hold the arms above the head. Apply ice or cold water to the nose and to the back of the neck. Inject either hot or cold water into the nostrils. Either alum or tannic acid is good when dissolved in water or snuffed up the nostrils or applied with a cloth. Hold the nostril shut with the finger and apply something cold to the head and neck. Snuff salt water. If the bleeding continues the doctor will plug the opening be-

tween the nose and the throat or will plug the nostrils with cotton saturated with a solution of adrenalin, 1 part to 2000 of water, or with a strong solution of cranesbill.

PEOPLE'S HOME REMEDIES.—

1. **Pressing on Lip.**—Press hard on the upper lip near the nose or press hard on the under part of jaw near the angle of the jaw bone.

Physician's Remark.—There is a large artery in the upper lip near the nose and another runs up over the jaw bone near the angle. Pressure on these parts checks the bleeding from the nose by shutting off the supply of blood.

2. **Pressing on Nose.**—Nose bleed can sometimes be stopped by pressure on the upper part of the nose as this closes some of the blood vessels.

3. **Dried Beef.**—Insert grated dried beef up the nostrils.

Physician's Remark.—This not only acts as a plug but the salt in the dried beef aids in contracting the blood vessels.

4. **Cold Packs.**—Apply cold packs to the nose, forehead and to the back part of the head and neck.

Physician's Remark.—Cold contracts the blood vessels in this region and lessens the flow of blood to these parts.

5. **Raising Hands.**—Hold the hands above the head.

6. **Alum or Salt Water.**—Saturate some lint or cotton in alum or salt water and insert up the nostrils as far as possible or snuff up some powdered alum.

Physician's Remark.—Salt and alum are astringents and help close the blood vessels.

7. **Witch Hazel.**—Witch hazel bark inserted in the nostrils will stop bleeding.

8. **Powdered Borax.**—Snuff some powdered borax up the nose and at the same time pour cold water over the wrists and back of the neck.

9. **Nettle Juice.**—Juice from the common nettle has stopped nose bleed when everything else failed. Wet some lint in the juice and put up the nostril.

10. **Ice Water or Vinegar.**—Snuff either ice water or vinegar. Apply ice or cold water to the back of the neck or bridge of the nose.

Physician's Remark.—The cold contracts the blood vessels and less blood is carried to these parts. Vinegar also contracts the blood vessels by its astringent or binding action and lessens the flow of blood, allowing it to clot by becoming coagulated or thickened.

11. **Closing Nostril.**—Press the nostril shut for several minutes and allow the blood to clot.

12. **Fat Bacon.**—Insert in the nostril a narrow strip of salty fat bacon about three inches long. Also hold ice in the mouth.

Physician's Remark.—The salt is astringent and aids in closing the blood vessels. The ice contracts the blood vessels in this region.

13. **Holding Nose.**—Hold the nose between the thumb and finger until the blood clots then expel the breath easily through the nose.

14. **Paper.**—Chew some paper to a wad and press it firmly under the upper lip or use the index finger instead.

Physician's Remark.—This presses on the artery in the upper lip and lessens the flow of blood.

NOSE, THINGS IN.—If a bean, grain of corn or wheat or any other for-

When the body gets into the nostril take a crochet hook and gently run it back behind the object and slowly and carefully draw it out. A hair pin properly bent may be used if preferred. Some times the object may be expelled by blowing the nose. Do everything gently. Seat the patient in a good light, open wide the nostril and put your instrument in or behind the object and draw forward. Do not be alarmed for if you cannot get it out any doctor can do so and in the meantime there is no danger.

POISONING.—(See chapter on "Poisons.")

SORES.—Apply camphor and cream either alone or together. White vaseline is good. For old and foul smelling sores apply finely powdered charcoal. Charcoal is a disinfectant. A good wash is made by putting a teaspoonful (60 grains) of potassium permanganate into a pint of water. Zinc oxide ointment is another good application. For freely running sores use powdered white oak bark as a poultice.

PEOPLE'S HOME REMEDIES.—

1. **Hot Water.**—Dip pieces of cotton into very hot water and apply to old sores. This is an effective remedy used in many hospitals.

2. **Scraped Potato and Charcoal.**—For old ill-conditioned sores apply equal parts of scraped raw potato and powdered charcoal. This is a very fine application for sores of this kind.

SPASMS.—(See "Convulsions.")

SPRAINS OR STRAINS, SPRAINED BACK, ETC.—Apply cloths wrung out of hot salt water or use wormwood or smartweed tea either with or without arnica. Soap liniment, a soap plaster or soft soap are good applications. Apply opodildoc liniment. Canada pitch plaster is another good remedy. Later paint the parts over with balsam of fir and bind with eel skin. Turpentine liniment is excellent but you must not use it too long for it is hard on the kidneys. See some of the good liniments given in another part.

For a sprained ankle or arm bathe for a long time with either cold or hot water as it feels best. Between the bathings dress the parts with lead water and laudanum, using 16 parts of water, 4 parts of undiluted lead water and 1 part of laudanum; then rub with ichthyol ointment or camphor liniment and laudanum.

PEOPLE'S HOME REMEDIES.—

1. **Egg, Salt and Honey.**—Take the white of an egg, a large spoonful of salt and the same amount of honey; beat them together continually for two hours; let stand an hour and then anoint the sprained parts with the oil which comes from the mixture. A man from Montana writes that he had a very badly sprained ankle but within twenty-four hours after using this application he walked without the least sign of pain.

2. **Clay and Vinegar.**—In case of a sprain or bruise make a paste of one part of blue clay and two parts of vinegar and bind on with a wet towel at night.

3. **Rosin and Butter.**—Make a paste with some powdered rosin and fresh butter and bind on the parts.

4. **Hot Water.**—Pour hot water from a height of three feet upon the sprained parts. A man writes that a strained ankle was cured by continuing this treatment for an hour.

5. **Alum and Egg.**—Powder a piece of alum the size of a hickory nut

and stir into the white of an egg until it forms a curd. Wet a piece of cloth in this and apply to the sprained parts.

SUNSTROKE.—(See "Heat Stroke.")

SMOTHERING.—(See "Asphyxia.")

STINGS.—(See "Bites and Stings.")

SHOCK.—(See "Apoplexy.")

WOUNDS.—(Also see "Bleeding.")—Use hot, clean, boiled water to thoroughly cleanse the wound. If any large blood vessels are torn they must be tied with something until the doctor comes. One can generally stop bleeding by the application of very hot or cold water or by twisting the blood vessels or by tying something tight about the limb. Wash the wound clean from dirt and all other foreign matter then dress it with gauze or linen. An antiseptic like listerine or glycothymoline should be used if possible to thoroughly cleanse the wound and some of it should be put upon the dressing.

PEOPLE'S HOME REMEDIES.—

1. **White Oak: Bark Tea.**—Cleanse the wound thoroughly with a tea made from white oak bark.

2. **Salt Water.**—Bathe the wound with weak salt water made with boiled water.

3. **Peach Leaves.**—Peach leaves pounded to a pulp and applied to a bruise or wound from a rusty nail will give immediate relief.

BANDAGING.

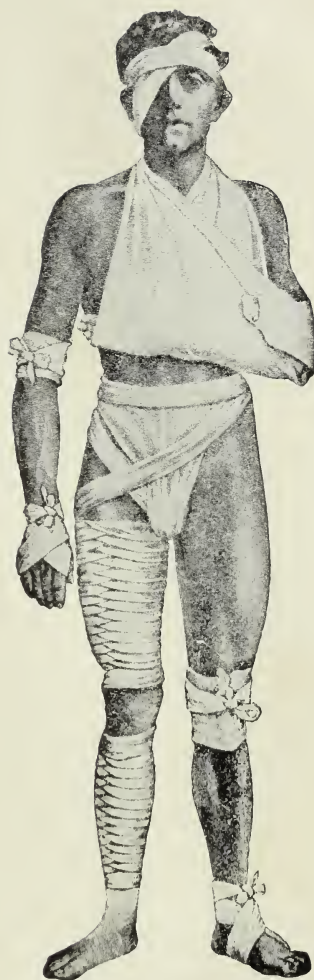
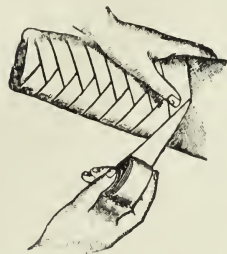
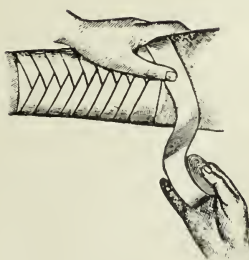
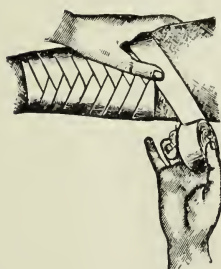
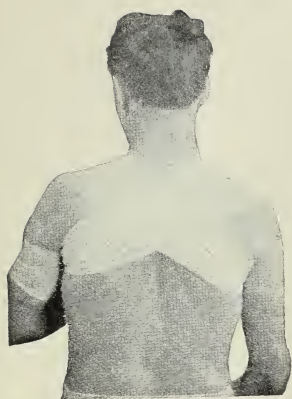
For Fractures, Broken Bones, Dislocations, etc.

Splints.—These may be made of pasteboard, shingles or light boards. They are used to help hold the parts in place and the bandages are wrapped about them.

Padding.—Cotton batting, soft linen or anything clean and soft may be used. Some places, like hollows and where there is likely to be pressure, must be padded more than others but the padding must be done evenly.

Bandages.—Bandages may be bought or made from old sheets. They should be from 3 to 10 yards long and from 1 to 5 inches wide. For fingers and toes they should be an inch wide; for jaw, 4 inches; for head, 2 inches; for collar bone, leg or arm, from 2 to 2½ inches. Wrap them tightly in a roll and keep for emergencies. Bandages and padding should be perfectly clean.

General Instructions as to Bandaging.—After the broken parts have been replaced the intent of bandaging is to keep the parts in place so as to give nature a chance to form new bone tissue and re-unite the bone. For this purpose, splints, padding and bandages are used. Bind tight enough to keep the bones in place but not so tight as to shut off the circulation or you may produce gangrene. Use enough padding to relieve the pressure from the splints. The parts should be padded so as to make them even. The result will not depend entirely upon the setting of the bone. The patient must do nothing either by working or moving that will displace the bone. A great many people are left deformed because fractures have been improperly set.



HOSPITAL METHODS OF BANDAGING.
(See Chapter on "Bandaging.")

Very few laymen can set them properly. Never set a bone permanently unless it is impossible to get a physician. We will give both temporary and permanent treatment. If, after setting the bone, the part swells much and the patient complains of much pain, especially in a simple fracture, partly take off the bandage until the patient feels easier and then apply again. For instance, if the patient has a broken elbow and wrist, when you loosen the bandage have one person hold the hand and another the elbow to keep the parts in place.

Do not bandage too tightly. You must allow for swelling. A common simple break should not pain much after it has been dressed half an hour. Put the bandage on just tight enough to keep the parts from slipping.

Wounds.—If the bone comes through the flesh, the flesh and bone must be thoroughly cleansed and the part must be bandaged so that you can get at it easily afterwards to dress it. You can miss the wound with the bandage and cover with gauze or linen that can be removed. Never put the splint on the wound. If the bone is badly crushed it must not be put in a splint. Place it in a comfortable position and treat for a time like you would treat a wound.

Fractures.—A fracture is a breaking of the bone either partly or entirely in two. In children whose bones are soft we sometimes find the bones bent instead of broken. This is called "green stick fracture." Put on pasteboard or light shingle splints, pad well with cotton and bandage. By gradually tightening the bandages you can straighten the bone.

Fractures are simple, compound, comminuted and impacted. Simple fracture means that the bone is broken partly or entirely off with no tearing of the flesh. A compound fracture is where the bone is broken and sticks through the flesh. A comminuted fracture is where the bone is broken into pieces or crushed. An impacted fracture is where one end of the bone is driven into the other. This often happens where there is a fracture of the hip or neck of the thigh bone. For practical purposes these are all the kinds of fractures it is necessary to mention.

Fracture of the Arm Bone (Humerus) Between the Elbow and Shoulder.

—While one holds the shoulder another holds the elbow and pulls on it to get the bone into place. When in place the arm will feel even with no deformity and there will be very little pain. With cotton batting pad the arm from the elbow to the shoulder. Do this evenly and thoroughly, having the cotton about an inch thick. To the back side of the arm apply a strip of thick pasteboard and allow it to extend a little below the elbow. In front apply another piece beginning a little above the elbow, to allow movement, and extending to the shoulder. The two pieces of pasteboard should be wide enough to meet on the sides of the arm. Take a bandage five yards long and two and a half inches wide and begin at the elbow and wrap upward allowing the bandage to lap from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch each time. When you bring the bandage in front, and again when you bring it behind the arm twist or turn it inside out so that it will neither slip up nor down. Do this each time you bring the bandage in front and behind the arm. Wrap comfortably tight but not too tight. It should be loose enough so that the patient can move the arm with little pain by taking hold of the forearm with the other hand. While the bandage is being put on, the shoulder, elbow and hand must be held by two or three parties. After the arm is bandaged the bandage at both ends may be cut lengthwise far enough to permit tying.

Fracture of Bones of Forearm.—As to the use of splints use the same method as for the bone from the elbow to the shoulder for temporary use. If the bones are broken near the wrist it is called "colles fracture." This kind of a fracture is very hard to treat for there is likely to be a dislocation of the outer bone at the wrist. One person should take hold of the elbow while another pulls at the hand until the bones slip into place. Then a third person pads the arm well with cotton while the two are still pulling. Put on pasteboard or light shingle splints. The lower one should extend from the elbow to beyond the ends of the fingers and should be well padded. The upper one should extend from below the elbow to the back of the hand and should also be well padded. Then when placed in position and held by other parties, bandage from the hand to the elbow just tight enough to hold the splints in place. Bandage the same as directed for the fracture of the arm above the elbow. The arm swells rapidly and if it pains much or the fingers become numb and blue it is generally because the bandage is too tight. Loosen the bandage a little and this will ease the patient until you can get proper help.

Fracture of the Collar Bone. (Clavicle.)—When the collar bone is broken there is pain at the injured place or shoulder, the shoulder hangs down and the patient leans to the injured side. For temporary treatment put a pad under the injured arm and put the hand and arm to the elbow in a sling tied about the neck. If you are where you cannot get a sling hold the injured arm and shoulder up and back until a sling is obtained or go to bed and arrange the shoulder and arm in a comfortable position until help can be obtained. For permanent treatment replace the parts by lifting the shoulder upward, backward and outward. Do this after you have your bandage and pads ready. The collar bone will look and feel even when in place.

Velpau Method of Bandaging.—We will first give the Velpau method of bandaging. Place the palm of the hand of the injured arm on the opposite shoulder with the forearm lying across the chest. Place padding between the chest and arm and hand and also in the arm pit on the injured side. This is to prevent chafing. Use a bandage ten yards long and $2\frac{1}{2}$ inches wide. Place the end of the bandage in the arm pit of the sound arm; pass it up across the back over the shoulder and broken collar bone, down the front of the arm on the injured side then across the arm and under the outside of the elbow; then pass it up across the chest to the place of beginning under the sound arm. Repeat the same way but when you get to the sound arm pit the second time pass the bandage across the back, but instead of going over the shoulder as before, pass it around the injured arm at the elbow and then across the chest to the sound arm pit again. Then go across the back and up over the shoulder and broken collar bone as the first two times and when you get to the sound arm pit go around the body as the third time, lapping from one half to one inch; then alternate each time you pass it around the body until you have used all the bandage. Use safety pins where necessary.

Desault Method of Bandaging.—In using the Desault method you use the same kind of bandage. Place the arm in the same position as when bandaging by the Velpau method and pad in the same way. Start from the arm pit on the sound side; pass the bandage across the chest and up over the injured collar bone and shoulder and down the back of the arm to the elbow; then pass it across the arm and chest to the point of beginning under the arm on the sound side; then across the back and up over the

shoulder and injured collar bone and down the front of the bent arm to the elbow; and from this point across the back to the point of beginning. Repeat these operations, alternating each time, until the bandage is all used. Pin the bandage where necessary and place the hand in a sling.

Fracture of the Hip.—Place the patient in bed and put bags of salt, sand or bran both on the inner and outer side of the thigh, knee and ankle and keep there until a doctor arrives. The leg may be short and turn either in or out and the bags will help keep it in place and ease the pain. If a doctor cannot be obtained, pad the leg well from the hip to the foot and bind on with strings or strips of cloth. Turn the foot out as it naturally belongs then take a bed slat or strip of board and put on the outer side of the leg. Pad the leg well where it touches this splint. The slat should extend from the waist to one or two inches below the foot and there should be a notch cut in the upper end to keep the bandage from slipping off. Wrap pieces of bandage about the limb and slat just above the ankle and the knee and tie there. Also bandage the upper end of the splint well around the body. The splint will now stay in place. Take a bandage 2 or 3 inches wide and begin to bandage at the ankle and proceed as directed in bandaging the arm above the elbow giving the bandage a twist or turning it inside out occasionally both behind and in front to prevent its slipping. Bandage the entire length of the limb then put a weight of from five to ten pounds on the lower part of the leg so as to prevent shortening. Fasten a rope to the lower part of the leg by bandaging or by use of adhesive plaster. Let the rope run through a pulley fastened to the foot of the bed and then tie the rope to the weight.

Fracture of the Thigh Bone.—Be sure the parts are put in place and then bandage the same as for a fractured hip. You must also use the weight and even then the limb is likely to shorten from half an inch to two inches.

The temporary treatment, of course, is to put the patient to bed and place the leg in a comfortable position. If the patient must be moved, place him in a wagon and let him lie down on something soft. Get two shingles or boards, pad the leg well and place one splint on the inner and the other on the outer side of the thigh or whole leg and then bandage from below upward. This will also do for fracture of either one or both bones of the leg from the knee to the foot.

Fracture of the Ribs.—Apply adhesive plaster from the backbone to the breastbone. Apply the plaster wide enough to extend two inches above and two inches below the fracture. First measure the length from the backbone to the breastbone. Cut enough pieces of plaster to make the right length and width. Then place one length on the table and apply another over the side of the first one, lapping from $\frac{1}{4}$ to $\frac{1}{2}$ an inch, and so continue until you have the band wide enough. It is best to shave off all the hair where the plaster is applied. While the patient stands up with his arms down and gets all the breath out of his lungs, place one end of the bandage on the backbone, then go forward quickly across the chest to the breastbone with the plaster drawn tight and even. Place a strip at each end of the band to prevent its slipping. This band, if properly applied, will ease the pain and should be worn for at least four weeks.

Fracture of the Lower Jaw.—Use the four-tailed bandage which is made by taking a piece of muslin a yard long and four inches wide and cutting it through the middle from both ends to within 5 or 6 inches of the center. After the broken jaw is in position put the uncut part of the bandage under

the chin so as to cover it. Take hold of the two upper pieces and tie comfortably tight at the back of the neck. Turn the two lower pieces up along the face in front of the ears and tie tightly on the top of the head. Then tie the ends on the nape of the neck and the top of the head together. Keep the bandage on for a week and for nourishment take milk through a tube or straw. Remain quiet and do not talk.

Another way to bandage a fractured jaw is by the use of a bandage $2\frac{1}{2}$ inches wide and 5 yards long. Start at the base of the skull and go up around the head on the right side to the top of the head, down in front of the left ear, through under the chin, up the right side of the face in front of the ear and over the head to the starting point and fasten with a small safety pin. Then go on around the right side of the neck, under the right ear to the jaw and chin, over the front of the chin and back under the left ear to the starting place and again use a small safety pin. Make the first round again and then the second, alternating until the bandage is all used. Always pin behind and when you are through pin on the top of the head.

Fracture of the Fingers.—Use a rolled bandage of suitable size and close the fingers over it and then bind them with strips of adhesive plaster running across the fingers or you can use a rolled bandage to bind about the fingers and hand. Another way is to put a well padded splint in the palm allowing it to extend beyond the ends of the fingers. Bind the fingers over this splint just tight enough to hold them to it. Do not bandage too tightly.

Fracture of the Nose.—You can tell the nose is broken by the deformity and by feeling of it. Mold the parts into place with your fingers and fasten with adhesive plaster. If you are careful you can pad a goose quill at the end, insert it into the nostril, mold the break into place over the quill, apply the adhesive plaster and then remove the quill. The nose mends quickly so it had better be attended to as soon as possible after breaking or you may have a crooked nose. It is generally safe to put the parts into place with the fingers and put adhesive plaster over the break to keep it in place. Unless the skin is broken you need no other dressing. The broken nose usually retains its position well after being set and adhesive plaster applied.

Dislocation of the Shoulder.—When dislocated the shoulder is deformed and the outside looks hollow. Grasp the arm below the elbow with one hand and gently carry it well out from the side. Place the other hand on the shoulder and press with the thumb upon the head of the dislocated bone which has usually slipped into the arm pit. Next, firmly extend the arm and at the same time make it describe a half circle towards the breastbone and while doing this press the head of the dislocated bone toward the socket. Then bring the arm to the side. Do not use much force. Sometimes you will need to give something to put the patient to sleep.

Dislocation of the Jaw.—Put something such as corks far back between the teeth on both sides of the jaw. Place your thumbs on the teeth of each side with your fingers under the jaw. Press downward and backward and with your fingers lift up on the chin. Instead of using corks you can wrap your thumbs thickly with a towel to protect them from being bitten when the jaws snap together. Press the thumbs hard on the back teeth and lift the chin up at the same time.

Dislocation of the Fingers and Toes.—If dislocated, grasp the fingers or toes in front with one hand and pull forward and downward while at the same time pressing upon the dislocated part with the other hand. If it is a back-

ward dislocation, pull forward and upward with one hand while pressing upon the dislocated part with the other.

FOODS FOR THE SICK AND HOW TO PREPARE THEM.

“Dishes for invalids should be served in your daintiest china and only a small quantity should be served at a time.”

Beef Tea by the Cold Process.—Take a pound of finely chopped round steak, a coffee cup full of cold water and a pinch of salt. Place in a covered jar and set in a cold place for 5 or 6 hours or over night. It is well to shake occasionally. Strain and squeeze out all the juice by placing the meat in a coarse muslin cloth and twisting very hard. This beef juice is very nutritious and better than the extracts of beef which are sold in the stores.

Beef Juice from Broiled Steak.—Take a pound of round steak with no fat on it, cut thick, broil slightly and press the juice out with a lemon squeezer or a meat press. You generally get from two to four ounces of juice from a pound of beef. This, seasoned with salt, may be given cold or it may be warmed by placing the cup which holds it into warm water. It should not be heated enough to coagulate the albumen which is in solution and which then appears as flakes of meat floating in the fluid.

Mutton Broth.—Take a pound of finely chopped lean mutton, including some of the bone, one pint of water and a pinch of salt. Cook for three hours over a slow fire adding water if necessary to make half a pint; then strain through a muslin cloth. When cold, carefully remove the fat adding more salt if necessary. A very nutritious and delicious broth is made from this by adding corn starch or arrowroot, cooking for ten minutes, and then adding three ounces of milk or $1\frac{1}{2}$ ounces of cream to each half pint of broth.

Chicken, Veal and Beef Broths.—These are made in the same manner as mutton broth and used in the same way.

Meat Pulp.—A rare piece of round or sirloin steak, the outer part having been cut away, is scraped or shredded with a knife and is then well salted. From a teaspoonful to a tablespoonful may be given to a child 18 months old.

Junkets or Curds and Whey.—Take a pint of fresh cow's milk, warmed, a pinch of salt and a teaspoonful of granulated sugar; add two teaspoonfuls of essence of pepsin, or liquid rennet, or one junket tablet dissolved in water; stir for a moment and then allow it to stand at the temperature of the room for twenty minutes, or until firmly coagulated; set in the ice box or a cool place until thoroughly cold. For older children this may be seasoned with grated nutmeg.

Whey.—The coagulated milk, prepared as above, is broken up with a fork and the whey strained off through muslin. It is best given cold. If some stimulant is desired, sherry wine in the proportion of one part to twelve, or brandy one part to twenty-four, may be added. This whey is useful in many cases of indigestion.

Barley Jelly from the Grains.—Take three tablespoonfuls of pearl barley, soak over night and then place this in one quart of fresh water; add a pinch of salt and boil in a double boiler steadily for four hours or down to one pint, adding water from time to time; strain through muslin. When cold this

makes a rather thick jelly. If a thinner gruel or barley water is wanted one half the quantity of barley should be used.

Oat, Wheat or Rice Jelly.—These are prepared from oatmeal, wheaten grits or rice grains in the same manner as the barley jelly.

Barley Jelly from the Flour.—Either Robinson's patent barley or prepared barley flour of the Health Food Company may be used. One rounded tablespoonful of the flour, thoroughly blended with a little cold water, is added, while stirring, to one pint of boiling water containing a pinch of salt. Cook for twenty minutes in a double boiler and strain. This makes a jelly of about the consistency of that above which is made from the grains. A thinner gruel or barley water is made by using half the quantity of flour. It is much less trouble to prepare this and it is essentially the same as that above. When this is to be mixed with milk it is well to add the milk to the barley gruel before removing from the fire and stir two or three minutes or until the milk has nearly reached the boiling point. It should then be removed and bottled.

Oat or Wheat Jelly from the Flour.—These are made from the prepared oat flour of the Health Food Company or Hubbell's prepared wheat flour. They are made and used like barley.

Imperial Granum.—This is prepared and used in precisely the same way as the barley flour above; the gruel being mixed with milk before it is removed from the fire.

Albumen Water.—Put the white of one egg into half a glass of water; stir slowly for about five minutes without getting it frothy and strain through cheese cloth. If necessary, sweeten and flavor to suit the child. Another way is to take the white of one fresh egg, one half pint of cold water, a pinch of salt and a teaspoonful of brandy. Shake thoroughly and feed cold either with a spoon or from a bottle. This is useful in cases of vomiting and can sometimes be retained by a very irritable stomach.

Dried Bread.—This may be used either fresh or stale. Cut into thin slices and place in the oven with the door open and quickly dry until it is crisp but not browned. For children this is better than crackers.

Coddled Egg.—A fresh egg with the shell on is placed in boiling water which is immediately afterwards removed from the fire. The egg should cook slowly in the water for seven or eight minutes when the white should be about the consistency of jelly. Add salt and for a delicate stomach give the white only.

Lime Water.—Take a heaping teaspoonful of slaked lime and a quart of bottled or distilled water; place in a corked bottle and shake thoroughly two or three times during the first hour; then allow the lime to settle for twenty-four hours. Carefully pour off and use the clear fluid. From a teaspoonful to a tablespoonful may be given at a feeding.

Gluten Water.—Gluten water is made from any grain, preferably barley or rice, by boiling from four to six tablespoonfuls of the whole grain in a quart of water for an hour. It should then measure one pint and be strained. This is very easily digested and very strengthening.

Oatmeal Water.—Take a tablespoonful of oatmeal or two tablespoonfuls of rolled oats and boil for three hours in a quart of water, adding boiling water to have a pint when done. For feeding to infants this should be strained and added to the milk.

Barley Water.—Add a tablespoonful of pearl barley to a quart of water

like the oatmeal water above. Strain and use as a substitute for oatmeal water when the bowels are loose.

Rice Water.—Add a tablespoonful of rice to a quart of water and cook for three hours as directed for oatmeal water. When strained this is a good substitute for milk in cholera infantum or it may be added to the milk for feeding infants.

Arrowroot Water.—Pour a little cold water on a teaspoonful of arrowroot and rub until pasty; add a pint of boiling water and boil from five to ten minutes, stirring constantly. This is often added to milk mixtures to break the rolled curd forming in a child's stomach. It should be strained.

Toast Water.—Two slices of dark brown toast should be added to a quart of boiling water. When cool use it for sick stomach or as a drink when thirsty.

Egg and Barley Water.—To the white of one egg add eight ounces of barley water and one and one-half teaspoonfuls of white sugar. This is good for a child recovering from a sickness when milk is not successful. Rice water may be substituted for the barley water if preferred.

Flaxseed Tea.—Add a tablespoonful of flaxseed to a pint of boiling water; let simmer for an hour; then strain, sweeten and flavor with lemon juice to suit the taste.

Cream and Rice Mixture.—Take cream, 2 tablespoonfuls; rice water, 4 tablespoonfuls; boiled lime water, 2 tablespoonfuls and sugar, 1 tablespoonful. Give every two hours but do not feed enough to cause vomiting. If the bowels are loose or show curds in the stools, decrease the amount of cream. Increase the cream when constipated. Increase the proportion of rice water as long as there are regular daily stools. Rice produces constipation when fed too freely.

Hard Boiled Eggs.—Eggs boiled for a few minutes only are generally tough and not very easily digested but if they be boiled for an hour they become tender and mealy and are easily digested. If the stomach is in very bad condition give only the whites at first then later the yolks also may be given.

THE PREVENTION OF DISEASE.

We are a very careless people in many ways. We travel at a furious gait and we are reckless of the certain results. A great many ills and diseases can be avoided. Suppose one is very warm, thirsty and sweating. How many in such a condition will pour ice water into their stomachs and produce gastritis which is inflammation of the stomach! Or, perhaps a severe chill is the result. How many in this condition sit down in a draught and check the perspiration and thus take cold and get sore throat, pneumonia, bronchitis, catarrh, neuralgia or rheumatism! How many will get their clothes or their shoes and stockings wet and never change them and dry the wet parts! How many girls get wet stockings and skirts and sit in them at school for hours even when they are "unwell" and then wonder why they have painful menstruations! How many will dance themselves into a perspiration and then sit in a cool place and cool off suddenly and wonder why they have coughs, headaches, neuralgia and are sickly in general. Nasal catarrh, chronic sore throat, laryngitis and consumption flourish on such errors.

How many people will drink the strongest kinds of teas and coffees, live

on them for breakfast, and then wonder why their stomach and nerves are bad, their bowels constipated and livers torpid! How many will continually eat ham, pork, sausage, rich pies and cakes, greasy gravies, warm pancakes and perhaps top off with tea or coffee or wines and liquors and then continue living a sedentary life and wonder why their stomachs give out and they have indigestion and dyspepsia! You cannot disobey the laws of health and remain well. I have frequently seen mothers give a ten months old baby rich cookies, candies and maple syrup and even peanuts. I once attended a year old child for convulsions. I found it had eaten peanuts for its evening meal. When I "got up" the peanuts the convulsions ceased. I have seen children eat green apples and die within a short time with dysentery or cholera infantum. The minister and parents mourned over the mysterious dispensation of Providence in taking their dearly beloved little ones. It was not Providence—it was Green Apples. I once knew a two year old child who died from eating a blackish, over-ripe banana. We reap what we sow whether we sow intentionally or otherwise.

How can you escape rheumatism if you live in a cold, damp, musty house which is closed against sunlight! Man made houses but God made the outdoors with the air and the sunlight.

And then as regards venereal diseases. These cannot be contracted without giving full payment. They are very difficult to cure in the chronic state. A few years ago in this city I saw a young man of good family who was then dying with inflammation of the kidneys caused by a venereal disease which had gone to the bladder and then affected the kidneys. And the man is not the only one to suffer. Years afterwards, when he thinks he is cured he may find that such is not the case and that he has infected his wife. The majority of cases of diseased ovaries and tubes that come to our public hospitals is caused by a latent venereal disease in the husband.

All these diseases could be prevented and preventive treatment is the only sure treatment. Teach your children how to live if you wish them to be healthy both physically and morally. Instruct the young of both sexes how they shall eat, drink and act and also as to the uses of the organs of generation.

DISEASES.

CAUSES, SYMPTOMS AND TREATMENTS.

INFECTIOUS AND CONTAGIOUS DISEASES.

DIPHTHERIA.

DESCRIPTION.—This is an acute infectious disease usually affecting children under fifteen years of age or before puberty. It is an acute inflammation sometimes affecting the mucous membrane of the entire throat including the nostrils, pharynx or back part of the throat, larynx, palate and even the nasal or nose passages. The disease is attended with a false membrane which develops in the mouth and throat.

CAUSES.—It is caused by a germ called the Klebs-Loeffler bacillus because these men first discovered these germs. The disease is taken by coming in contact with or near those having it.

SYMPTOMS.—Diphtheria is from two to seven days in coming on. The patient has a sense of weariness, chilliness and fever. The severity of these symptoms varies greatly in different cases. Sometimes they are so mild that the child does not seem to be ailing at all and the parent is much surprised upon looking into the mouth on the second day to find a grayish spot or membrane on the tonsils, soft palate, uvula or in the throat. In other cases the disease comes on suddenly from the start. In nearly every case there is some complaint of sore throat or of difficulty in swallowing. The back part of the throat is red or inflamed and upon one or both tonsils is seen a tiny grayish patch which is the beginning of the membrane of either tonsilitis or diphtheria. If it is tonsilitis it will appear on the tonsils only and when the membrane is removed a smooth glistening surface remains while if it be diphtheria the membrane will quickly spread to other parts of the throat and perhaps to the nose passages. In diphtheria the membrane is of a grayish or light mouse color and in many cases becomes shaggy and dirty looking. In attempting to remove it you find that it sticks closely to the lining of the throat. It can be removed only by tearing it loose so that a raw bleeding surface is left over which another membrane quickly forms. In this way you may distinguish between tonsilitis and diphtheria. There is nearly always some enlargement of the glands or kernels under the jaws. Frequently the membrane extends into the nostrils and there is then an acrid or burning discharge from the nose. This kind of diphtheria is very dangerous and most frequently affects infants or very young children.

Laryngeal Diphtheria or Diphtheria of the Larynx; Also Formerly Called Membranous or True Croup.—A membrane forms which causes very difficult breathing which is attended by hoarseness when speaking or crying and a harsh cough with a metallic sound. Following these symptoms it is noted that there is a light whistling sound when the breath is drawn in and this whistling is increased at times by what seems to be a spasm of the larynx or

upper part of the windpipe. This is followed by constant whistling, harsh breathing, much restlessness and anxious breathing. The child may grasp the throat with its hands and as it becomes bluish it often grinds its teeth and looks piteously from side to side for relief. Its pallid face may be covered with sweat and altogether it is a painful sight to witness. As the disease advances the child becomes more and more limp and struggles less and less for breath and unless relief is quickly obtained suffocation will be the result. Sometimes in the older children some of the false membrane is thrown out and in some instances they throw out large pieces showing the entire form of the larynx or upper part of windpipe.

TREATMENT.—

Preventive.—As soon as a white or grayish spot shows in the throat or on the tonsils of one having sore throat that person should immediately be placed in a room by himself and others kept away. If it proves to be diphtheria other children who have been with the patient should at once be given preventive doses of antitoxin by a physician. The furniture of the sick room, such as carpets and curtains, should be removed and only necessary articles such as bedding and clothing should be retained. After removing the carpets, curtains, etc., they should be put into a solution of corrosive sublimate of the strength of from 1 to 1,000 to 1 to 5,000. This can be bought in tablet form of any desired strength at any drug store.

After being disinfected these things should be boiled and dried in the sun. The room should be well ventilated. The nurse should not mingle with any other members of the family. All articles of clothing or bedding used by the patient should be dipped into an antiseptic solution, such as corrosive sublimate of the strength 1 to 2,000, before removal from the sick room. The physician, before entering the sick room, should cover his head with a linen cap and wear a rubber coat or wrap a sheet about him. These should be disinfected both before and after using and when not in use should be hung outside the sick room. If it is necessary for members of the family to enter the room they should observe the same precautions and on leaving the room they should gargle or rinse the mouth with some mild cleansing wash such as boric acid solution. After the recovery of the patient the articles in the room should be washed in an antiseptic solution and the room thoroughly disinfected. Directions for this are given in the Nursing Department.

Emergency Remedy or "What To Do."—While you are waiting for the physician have the patient gargle his throat frequently with hot water and if you wish you may add a little vinegar and pepper to it or you can gargle with pure lemon juice, listerine or any other mild antiseptic. In some cases a little sulphur blown into the throat through a goose quill is an excellent remedy.

Caution or "What Not To Do."—Do not use utensils or garments used by the patient until they have been thoroughly disinfected. Do not get any of the sputum or other discharges upon any part of your person and if you do you should wash and disinfect the parts immediately with a 1 to 5,000 solution of corrosive sublimate. Do not forget to look out for difficult breathing, hoarseness or coughing and if any of these are noticed send for the attending physician at once. Do not let the patient mingle with others until he has been pronounced cured and safe. Do not wash the patient's head or hair until two weeks after cured as there is great danger of taking cold. Do not under any circumstances allow the patient to take cold during or for some time

after sickness or serious after effects are likely to be the result. Do not let the patient get out of bed until well and strong and do not allow him to exert himself for some time after recovery as the heart is left weak and many persons have died of paralysis of the heart after they were pronounced cured.

Allopathic Treatment.—Antitoxin is now the chief remedy and used by all schools of physicians but this must be administered by a doctor. Some give bichloride of mercury in doses of from 1/100 to 1/60 of a grain every hour.

Homeopathic Treatment.—Belladonna, 3rd dilution; mercurius protoiodide, 2nd trituration; kali bichromicum, 2nd trituration; lachesis, 6th dilution. As to direction and doses see "Homeopathic Medicines" in the Nursing Department.

Nursing and Diet.—See that the room is well ventilated but do not allow the patient to take cold. Be careful to disinfect every article that comes in contact with or near the patient and carefully follow all instructions of the doctor. The diet should be mostly of milk or milk preparations. If other foods are given they should be such as are easily digested such as broths or barley or rice gruel. For preparing these see "Foods for the Sick" in the Nursing Department.

After Effects.—Diphtheria leaves the heart in a weak condition and paralysis of the heart, causing death, is often the result especially where the patient over exerts himself too soon. Sometimes there is general paralysis and very frequently the muscles of the tongue and the swallowing muscles of the throat are affected and this is first shown by the food, which has been swallowed, coming up. Sometimes the vocal cords are paralyzed causing temporary loss of speech. Other results are broncho-pneumonia, pleurisy, inflammation of the stomach and bowels and inflammation of the kidneys. The parents and nurse should take great care that none of these serious after effects are caused by their carelessness. Follow carefully the instructions of the doctor and be exceedingly careful not to let the patient catch cold.

PEOPLE'S HOME REMEDIES.—

1. **Salt Water and Fat Bacon.**—Gargle with salt and water and apply bandages wet with salt and water to the throat and bind on slices of fat bacon.

2. **Linseed Meal Poultrice.**—To reduce the swelling of the neck apply a poultrice of linseed meal. At the beginning of the disease have the patient inhale the steam from hot water and vinegar.

3. **Glycerine and Creosote.**—Gargle with a mixture of glycerine, 2 ounces; and creosote, 7 to 8 drops.

4. **Steam from Lime Water.**—Have the patient inhale the steam from lime water.

5. **Alum.**—Blow finely powdered alum into the throat or use alum water as a wash.

6. **Vinegar and Honey.**—A gargle composed of vinegar, honey and warm water is an excellent remedy. For adults add red pepper.

7. **Salt and Ashes.**—Fill a flannel bag with salt and ashes and apply hot to the neck. This has proven very effective in many cases.

8. **Lemon Juice.**—A French physician says he has cured many cases of diphtheria in the first stages by giving lemon juice as a gargle. To half a glass of water add the juice of one lemon and when gargling a little swallowed will be all the better.

Physician's Remark.—Lemon juice contains citric acid.

Do not depend upon this alone but get a physician.

9. **Pitch Tar.**—Insert a funnel over some pitch tar on a hot iron and let the patient breathe the smoke five or six times a day. Also let the patient hold small pieces of ice in the mouth. This treatment has eased the distress in a great many cases.

10. **Sulphur.**—Gargle with sulphur and water.

11. **Sulphur and Lemon Juice.**—Mix sulphur with lemon juice and take a little in the mouth every half hour.

SCARLET FEVER.

Scarlet Rash—Scarlatina.

DESCRIPTION.—Scarlet fever is an acute infectious disease with an eruption or rash peculiar to itself. It most frequently affects children under 15 years of age. The rash is scarlet tinted and made up of very many small or minute points. It shows on the second day of illness and is attended with fever. It is most likely to occur during the fall and winter months. The fatality tables of our cities show that on an average death occurs in from 10 to 14 per cent. of the cases but in children under five years of age between 20 and 30 per cent. of the cases are fatal. These percentages are probably too high because many of the milder cases are not reported at all.

CAUSES.—Scarlet fever is taken by coming in contact with a person affected or with the scales which come from his body. A person may also be infected through the discharges from the nose or ear of the patient and by coming in contact with articles of clothing worn by the patient or furniture which has been in the sick room. Books and letters may retain the infection for a long time and the disease is frequently spread by pets such as cats and dogs. The author once attended a family where four of the children had taken scarlet fever by playing with a dog coming from the home of a neighbor where they had the disease. No other acute disease renders the surroundings of the patient a source of danger for so long a time. Clothing and upholstered furniture have transmitted the disease to healthy children two years after the recovery of the patient.

Nursing babies do not take the disease so readily as children from 2 to 5 years old at which age it most frequently occurs. A scarlet fever patient cannot transmit the disease until the rash develops. At about the fourth or fifth day the patient can easily give the disease to others and he can then do so as long as he continues to "scale off," which is often for six weeks. Articles of food may convey the disease and it is very frequently spread through milk coming from dairies where there are persons employed who have scarlet fever or in whose family it exists.

SYMPTOMS.—Not all persons who are exposed take the disease but if they do it is usually from 3 to 10 days after exposure. One seldom has it the second time.

How It Begins.—It usually begins with a sore throat, a moderately high fever, headache and backache and frequently is attended with sickness at the stomach and vomiting. The disease generally begins suddenly and the suddenness and severity of these symptoms generally show how hard one is to have the disease.

The Rash.—The scarlet rash is made up of many fine points which are so close together as to give the skin a flushed appearance like a continuous or solid rash. It looks a great deal like a severe case of heat rash. It appears on the second day and is seen first on the chest but may spread over the entire



SCARLET FEVER.
(3rd and 4th days.)
(Taken at Ann Arbor, Mich., especially for this book.)

body in 4 or 5 hours. In mild cases the rash continues only for a day or two but in severe cases it may last for 5 or 6 days. The rash ends with "scaling."

The Sore Throat.—The rash is generally attended with a very severe sore throat which causes much difficulty in swallowing. The back part of the throat is red and angry looking and sometimes so sore as to obscure or hide all the other symptoms of the disease. Frequently the tongue first looks like an unripe and later like a ripe strawberry.

The Scaling.—When the rash ends the outer skin begins to come off in scales of varying sizes. The skin may "peel" off of the hands and feet. The amount of scaling and how long it will last depends upon how hard one has the disease. It usually lasts 3 or 4 weeks but in bad cases it may last as long as 6 or even 8 weeks.

The Fever.—The fever reaches its height within a few hours from the beginning of the attack and often runs up to 105 degrees within 12 hours but usually falls to 103 degrees after 24 hours and then gradually decreases.

Diseases Coming With Scarlet Fever.—A stopping of the urine, or water, may be one of the first symptoms or albumen in the urine may be the only evidence of kidney trouble. Swelling under the eyes is also a symptom of kidney trouble and dropsy is likely to set in before you realize it. There is also likely to be inflammation of the ears.

Distinguishing Features or "How to Tell it from Other Diseases."—To distinguish scarlet fever from other diseases you should consult the "Table of Symptoms" and "The Comparison of Diseases" given in the Nursing Department of this book. Rose rash looks a great deal like scarlet fever but in that disease there is no sore throat and the tongue does not have the peculiar strawberry look. Both of these symptoms are generally found in scarlet fever and will aid you in distinguishing it from other diseases.

TREATMENT.—

Preventive Treatment.—Separate the sick one from the rest of the family and if more than one is sick it is best for them to be put into different rooms. Remove from the room all curtains, carpets, etc., leaving only necessary articles. As to disinfection use the same care as in diphtheria and other infectious diseases. The clothes worn just before illness should be boiled or sterilized in steam and then aired in the sun. During and after the illness, the bed clothes and linen when removed should be put into a 1 to 5,000 solution of corrosive sublimate and then boiled, dried and aired in the sun. After the patient is well the sick room should be disinfected. Directions for doing this are given in the Nursing Department. To prevent spreading the disease do not allow any of the children to go to school or mingle with other children while you have scarlet fever in the house. Do not allow the children to play with cats or dogs coming from homes where they have the disease. Spray the throats of the children, who have not yet taken the disease, every morning with listerine or some other mild antiseptic. If the patient is greased from head to foot it will prevent the scales flying so much and spreading the disease.

Emergency Remedy or "What To Do."—Separate the child from the rest of the family as soon as the symptoms are suspicious. Put even the mildest case to bed and it is well to grease the child from head to foot with unsalted lard or a piece of fat bacon. If the child is old enough it is well to have it gargle its throat frequently with a weak solution of chlorate of potash. Use from 3 to 5 grains to an ounce of water. Keep the child warm

and comfortable. Watch carefully for symptoms of dropsy or kidney trouble and save the urine that the doctor may note the condition of the kidneys and perhaps avoid serious after effects. Watch for pains in the ears as inflammation of the ears and deafness are often the results of scarlet fever.

Caution or "What Not to Do."—Above all else do not allow the patient to take cold and especially during scaling; as kidney trouble, deafness, or blindness may be the result. Do not throw away the urine as the physician may need to examine it daily as to quantity, color and consistency. Do not allow those attending the patient to mingle with others and do not allow the patient to do so until the doctor or health officer gives permission. If in the city, or country districts where they have health boards, do not disobey their laws and do not fail to report even the mildest case. When there is scarlet fever in the neighborhood do not go near it or allow the children to mingle with any of the family or play with their cats or dogs. Do not forget to disinfect.

For the Intense Itching.—Grease the patient with fresh unsalted butter or a piece of bacon or rub with sweet oil containing from $\frac{1}{2}$ per cent. to 1 per cent. of carbolic acid. Or, the patient may be rubbed with weak carbolized vaseline. This is vaseline containing a very small amount of carbolic acid.

For the Pain in the Ear.—Syringe the ear 2 or 3 times a day, or oftener if necessary, with a normal salt solution as hot as can be borne. The normal salt solution contains four parts of salt, three parts of sodium carbonate and one thousand parts of water.

For the Dropsy.—If the patient has dropsy and does not pass enough urine, and usually he does not, give pumpkin seed tea freely. Meanwhile sweat the patient either with the corn sweat as described in the Nursing Department or in the following way. Put the patient in a warm room and have him sit on a cane seated chair with a blanket pinned tightly about the neck and hanging to the floor on all sides. Put a pail of water under the chair and into it put a hot brick. This will create steam and cause the patient to sweat. Instead of the water and brick you can attach a hose to a steaming teakettle and then put the other end under the blanket; or, if the patient is in bed, it can be put under the bed clothes which have been raised above the patient. Care should be taken not to scald the patient. Or, the croup tent may be used as described in the Nursing Department.

Allopathic Treatment.—For a child eight years old give 5 grains of citrate of potash and 20 drops of sweet spirits of nitre in a little water 3 or 4 times a day. Or, for the bowels and kidneys, mix 2 ounces of epsom salts with 2 ounces of cream of tartar and give two teaspoonfuls dissolved in a little water every 3 hours until the bowels move freely. The bowels should move once or twice daily. This dose of salts and cream of tartar is for a child a year old.

Homeopathic Treatment.—Put 10 or 15 drops of the third dilution of Belladonna into half a glass of water and give two teaspoonfuls every 1 to 3 hours. For the kidneys when there is passing of but little water give the third trituration of Apis. Mel. Give 1 tablet every 1 to 3 hours. (See "Homeopathic Medicines" in Nursing Department.)

Nursing and Diet.—The nurse should see that the patient stays in bed even if it is a mild case for there is great danger of taking cold and leaving bad after-effects. If the rash is driven in it should be brought out with hot teas and by sweating. The sick room should have good ventilation and

plenty of sunshine. The temperature should be about 68 degrees or comfortable for the patient. It is well to have the child, if old enough, gargle its throat frequently with chlorate of potash as directed above. This may be kept up from the beginning to the end of the attack. When the child is getting well it should be bathed every day with warm soapy water to aid in the scaling and to lessen the tendency to kidney trouble and dropsy. After the first two or three days, when the child is no longer sick at the stomach, cold water should be given frequently as a drink. Where the child refuses milk as a diet and is continually wanting water, the water and milk may be mixed. Do not give milk during the vomiting stage of the disease.

If the fever remains persistently above 103 degrees or if it occasionally rises to 105 degrees, the child must be bathed well in water which at the beginning is about 90 degrees but is allowed to drop to 80 or 85 degrees during the bath which should last from 5 to 15 minutes. The child should be rubbed all over during the bath. Applications of cold water at 50 degrees should be made to the head as long as the fever is at 104 degrees or higher. Where there is no bath tub to be used, frequent washing with water at 60 to 70 degrees must be adopted without drying the child afterwards. The cooling baths must be repeated often to control the fever.

After Effects.—Dropsy, chronic kidney trouble or Bright's disease are very likely to follow scarlet fever and there may be a discharge from one or both ears caused by inflammation of the ear which may result in deafness. Weak eyes, sometimes resulting in partial or total blindness, and endocarditis, or heart disease, are other bad after effects. Many cases of chronic tonsillitis follow and sometimes the glands under the jaw are permanently enlarged. Of these after effects kidney and ear troubles probably occur most frequently. The parents or nurse should constantly keep a look-out for pains in the ears and attention must be paid to the urine and the patient must not be allowed to take cold if you would guard against the serious after effects of scarlet fever.

PEOPLE'S HOME REMEDIES.—

1. **Fat Bacon—Sulphur—Cold Water.**—Rub the patient morning and evening from head to foot with a piece of fat bacon. Should the throat be very sore apply cloths wet in cold water. Should the eruption suddenly disappear bathe all over with cold water and without drying cover immediately with woolen blankets and give cold water to drink. When the skin begins to peel give an occasional dose of sulphur.

Physician's Remarks.—Greasing the patient relieves the itching and aids in keeping the scales from flying and spreading the disease. In using cold water be careful not to chill the patient.

2. **Hot Teas.**—If the case is not severe little medicine is needed. Give pennyroyal, catnip, saffron or sage tea. To relieve vomiting give water with a little soda in it.

3. **Chipped Ice.**—For the vomiting give the patient small chips of ice in the mouth.

4. **Bacon.**—Give the patient a warm sponge bath every night, then grease the entire body with a piece of uncooked bacon. If the case is severe bind slices of bacon upon the breast, neck, and soles of the feet. This treatment will not interfere with anything the physician may see fit to give internally if he is called later.

Physician's Remarks.—The bathing establishes a good circulation in the skin and thus keeps the eruption out; it keeps the pores open and helps the skin to throw off its proper secretions and rid the body of poisons and it also induces sleep.

5. **Onion and Saffron.**—Cut an onion in halves; take out the heart; put a spoonful of saffron into the cavity; put the pieces together again; wrap in a cloth; and bake in an oven. When the onion is cooked so that the juice will run freely, squeeze out all the juice and give a teaspoonful to the patient. Rub goose grease or a piece of bacon on the chest and throat. Keep the patient warm and seldom any other treatment will be required.

Physician's Remarks.—The saffron keeps the bowels open and the onion is soothing to the sore and congested throat. This remedy comes from a mother living in California who successfully treated her five children who all had the scarlet fever at the same time.

6. **Pepper, Salt and Vinegar.**—Take cayenne pepper, 1 teaspoonful; common salt, 2 teaspoonfuls and a teacupful of water with enough vinegar added to make of the desired strength. Bring these to the boiling point, let stand until cool and then strain. Use as a gargle for sore throat either in colds or scarlet fever.

7. **Warm Lemonade.**—An eminent physician of Boston robs scarlet fever of many of its terrors by prescribing warm lemonade with a little mucilage or gum arabic dissolved in it. This he gives as often as the patient desires. He also applies warmth to the stomach and directs that a cloth be wrung out of hot water and laid upon the stomach and changed as rapidly as it cools. Nothing but the lemonade is given internally.

8. **Cleaver's Root Tea.**—Give a tea made of cleaver's root. The dose is from 1 to 4 ounces. Or, equal parts of cleaver's root, maiden hair and elder blows, steeped in warm water for 3 hours and drank freely when cold, is good for scarlet fever and other eruptive diseases.

MEASLES.

Rubeola—Morbilli.

DESCRIPTION.—Measles is an acute infectious disease. It is usually epidemic, that is, it runs through a neighborhood. It usually attacks children and a person over 20 years of age seldom has it.

CAUSES.—The disease is contagious and taken by coming in contact with or near those who have it. It is carried in clothing, etc.

SYMPTOMS.—It usually comes on rather gradually and is much like an ordinary cold in the head in that there is coughing, sneezing and watery eyes and nose. The eruption generally appears on the third or fourth day. Upon close inspection it is first seen in the mouth but is usually first noticed on the face and neck as small red spots and from these places it spreads slowly over the body. The spots are like blotches. The cough is caused by the eruption in the windpipe and for this reason cough medicines generally do but little good until the eruption disappears. The eruption is also in the eyes causing them to be inflamed and very weak. The disease spreads rapidly through the air and you do not need to come in contact with the patient or his garments in order to take it. A very short exposure to the infected air is all that is necessary for one to take the measles. The patient rarely gives the disease, though, after three weeks have expired from the



MEASLES.
(5th and 6th days.)
(Taken at Ann Arbor, Mich., especially for this book.)

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beginning of the attack. One usually comes down with the measles in from 8 to 20 days after exposure. It seldom occurs more than once in the same person.

TREATMENT.—

Preventive.—Keep away from those having the disease and do not allow the children to play with pets coming from homes where the disease exists. Disinfect the clothing, furniture and sick room. Prevent the broncho-pneumonia, which sometimes follows it, by not taking cold and prevent trouble with the eyes by not using them or exposing them to light.

Emergency Remedy or "What To Do."—Put the patient in a darkened room where no strong light can strike the eyes; see that he does not take cold and keep the eruption out, if necessary, by giving hot drinks.

Caution or "What Not To Do."—Do not let the patient take cold or the cough will be made worse and the lungs and bronchial tubes will be affected and sometimes a severe attack of bronchitis or pneumonia will be the result. Do not let the patient read or expose the eyes to a strong light or the sight may be ruined for life. Do not overload the stomach or diarrhea will be the result.

Allopathic Treatment.—For the cough, which is hard to control, give 1/30 of a grain of codein from 1 to 3 times in 24 hours. This is the dose for a child two years old. If there is diarrhea give blackberry wine or a tea made from blackberry root.

Homeopathic.—At the beginning, for the fever, give the 2nd dilution of Aconite. Put 10 to 15 drops in a glass half full of water and give 2 teaspoonfuls every 1 to 3 hours. For the tight cough, throbbing headache and sore eyes give the 3rd dilution of Belladonna. It is prepared and given the same as the Aconite. If it hurts to cough give the 2nd dilution of Bryonia in the same way.

Nursing and Diet.—Put the patient into a darkened room where no sunlight enters and do not allow him to use the eyes or they will be weakened. See that he does not take cold or serious consequences will follow. Keep him warm but not uncomfortably hot. To bring out the rash give warm teas such as elder blossom, ginger or horehound. If there is no room which can be kept at an even temperature the patient should remain in bed during the entire attack. Watch the cough and if there is pain in the chest it should be attended to at once or bronchitis or pneumonia will be the result.

Cold drinks are refreshing and beneficial if not given too freely. To children, give milk after the fever from the eruption has passed. To adults, as there is generally some trouble with the stomach and bowels, give food frequently and it should consist of the various broths, milk, eggs boiled for only one minute and similar substances.

After Effects.—Weakened eyes and impaired eyesight are the results of reading or exposing the eyes to the light during or soon after the disease. Bronchitis and pneumonia are the results of taking cold.

PEOPLE'S HOME REMEDIES.—

1. **Weak Lye Water.**—To relieve the itching frequently bathe the patient with warm, weak lye water.

2. **Blackberry Root Tea.**—If there is any diarrhea give blackberry root tea.

Physician's Remark.—This is good because of its slightly astringent qualities.

3. **Poultices of Mustard, Hops and Lobelia.**—If there is inflammation of the lungs apply a mustard poultice to the chest and follow with a poultice of hops and lobelia. Change every half hour.

Physician's Remark.—This poultice is good for all kinds of inflammations.

4. **Saffron Tea or Hot Lemonade.**—Give plenty of warm saffron tea or hot lemonade and if possible keep up a gentle sweat. Sponge the patient every few hours with warm vinegar and water.

5. **Elder Flower Tea.**—To bring the rash out give warm elder flower tea.

GERMAN MEASLES.

Rubella, Rötheln.

Description.—This is a distinct disease and not a form of the regular measles or scarlet fever. It is usually mild and rarely affects adults.

Causes.—It is contagious and is taken by coming in contact with or near those who have it. It is carried in clothing, etc.

Symptoms.—The person usually comes down in from ten to twelve days after exposure. There is chilliness, general weakness, some running of the nose and eyes and there is generally headache. The rash sometimes appears as early as the first day but sometimes not until the third day. The rash appears as red spots but is not scarlet. It is first seen on the face and then the chest, lasts about three days and then gradually fades away. There is generally an enlargement of the lymph glands below the ears and under the jaw and this is characteristic of the disease. The symptoms of a cold are not so severe as in measles. There is not the coughing that goes with measles but the glands swell in German measles while they do not in measles. The fever is low and there is no sore throat like there is in scarlet fever.

TREATMENT.—

“**What to Do.**”—Rest in bed and for the kidneys give a teaspoonful of sweet spirits of nitre every three or four hours.

“**What Not to Do.**”—Do not take cold. Do not expose others.

MUMPS.

Epidemic Parotitis.

Description.—Mumps is an inflammation of the salivary glands. It is an acute disease of childhood and is infectious and contagious. It is also contracted by adults. The disease affects the parotid glands back of the jaw and below the ear and is accompanied by mild symptoms which, unfortunately, are often not severe enough to be noticed until the person has taken cold and serious results follow. It occurs oftenest between the fourth and fifteenth years or before puberty. One attack protects a person from the second.

Causes.—Mumps is usually conveyed from one person to another and is contagious from beginning to end of the attack.

Symptoms.—The glands back of the jaw are swollen which gives the patient a broad appearance at and under the ears and prevents his chewing anything solid. The pain lasts for some days, usually about a week. The attack comes on from three to twenty-five days after exposure and the average is fifteen days. The pain is greatly increased by moving the jaws or by taking sour things like pickles and vinegar into the mouth.

TREATMENT.—

Caution or "What Not to Do."—Above all things do not take cold.

Allopathic Treatment.—Anoint the parotid glands back of the jaws twice daily with warm oil of henbane and cover with cotton. Keep the bowels open. If the swelling goes to the breasts, ovaries or scrotum give aconite in full doses of from 1 to 5 drops every 1 to 3 hours and citrate of potash in full doses, 10 to 30 grains every three hours, for the kidneys. Rest is a necessity. Put a bandage on the scrotum to hold it up. Apply hot boiled beans to the scrotum as a poultice. This is very good and I have often used it for this trouble.

Homeopathic Treatment.—Mercurius Sol., 3rd trituration. Give one tablet every 1 to 3 hours. If the swelling goes to the scrotum give the 3rd dilution of Pulsatilla, two teaspoonfuls of the prepared solution, every 1 to 3 hours. (See "Homeopathic Medicines" in Nursing Department.)

Nursing and Diet.—Usually the only danger in this disease is from the complications. Do not take cold. Remain in the house. Drink milk and live on liquid foods. In women, if the swelling goes to the breasts or ovaries, apply hot fomentations of hops. Renew them often and keep them hot. If the pain is great you can put from $\frac{1}{2}$ to 1 teaspoonful of laudanum in the steaming cloth. You need not use the laudanum every time but about once every 2 or 3 hours. Generally the heat and moisture will ease the pain. In men, if the swelling goes down to the testicles or scrotum, boil some beans thoroughly, apply as a poultice and keep on for days. Of course it is to be applied hot. The beans hold the heat and moisture longer than hops and are thus particularly good for this purpose.

After Effects.—If one takes cold during an attack of mumps the swelling will go to the testicles or scrotum in men and to the breasts or ovaries in women. This is a very serious and painful result and sometimes is never fully recovered from. Every precaution should be taken that the patient does not take cold and especially if the patient be an adult. The author was once called to treat a man sixty years of age who had been very careless and taken cold so that the swelling "went down" on him. As a result a clot of blood lodged in the brain causing partial paralysis and entire loss of speech. As he gradually got better his speech came back slowly. He would say "he" meaning "she" and though his wife's name was "Alice" he persisted in calling her "Cora." Even after recovery, on damp days and at certain times when a little excited, he would partially lose his speech again. One cannot be too careful about taking cold during an attack of mumps.

PEOPLE'S HOME REMEDIES.—

1. **Hot Herb Teas.**—If the swelling is painful produce sweating by placing the feet in hot water and drinking teas of catnip, spearmint, balm or pennyroyal. The bowels should be kept open with epsom salts or castor oil.

Physician's Remark.—The above is a good treatment as the sweating relieves some of the congestion.

2. **Liniment.**—An excellent application is a liniment made by mixing two ounces of alcohol with an ounce each of gum camphor, oil of sassafras, spirits of hartshorn, castile soap and spirits of turpentine.

3. **Poultices.**—If the swelling goes to the testicles or breasts, produce sweating and apply to the affected parts poultices of equal parts of hops

and stramonium leaves made with hot water. Chamomile flowers also make a good poultice for this purpose.

CHICKEN-POX.

Description.—This is an acute infectious disease usually occurring in children under ten years of age and seldom after puberty.

Cause.—It is caused by infection or taking the germs into the system.

Symptoms.—Fever usually lasts from twenty-four to forty-eight hours and during this time the pimples appear first upon the exposed parts of the body such as the forehead, face, and hands and then upon the chest and back. There may be only a few or there may be hundreds. These pimples are first red, then a clear liquid forms and this later usually turns to a yellowish color and then they break and dry up leaving no scars unless they are very large or have been irritated by scratching. The patient is usually well in a week but red spots where the pimples have been remain much longer.

TREATMENT.—

“What to Do.”—After the liquid has formed in the pimples the large ones on the face should be pricked and washed twice daily with boric acid solution, using half an ounce of boric acid to a pint of boiled water.

“What Not to Do.”—Do not let the patient scratch the sores.

PEOPLE'S HOME REMEDIES.—

1. **Hot Teas.**—Keep the patient in the house and but little medicine is required. Give saffron, pennyroyal, sage or catnip tea and open the bowels with a seidlitz powder.

Physician's Remarks.—Saffron acts on the bowels, pennyroyal causes sweating and sage is a tonic. These teas bring out the eruption.

2. **Talcum Powder.**—Apply talcum powder to relieve the itching.

SMALL-POX.

Variola.

Description.—This is an acute infectious disease affecting the entire body but showing itself chiefly upon the skin and more particularly upon the face and forearms as an eruptive skin disease which first appears as spots which turn to pimples, then to watery pimples, then to pus pimples and finally to a hollowed out place in the skin. The disease existed many centuries before the time of Christ.

Cause.—It is taken by coming in contact with or near those who have it and is caused by the infection entering the system.

SYMPTOMS.—The disease usually comes on from five to twenty days after exposure, as a rule about twelve days, then the symptoms develop as in many other acute diseases. Headache and backache are the most prominent symptoms and they are peculiar and very severe. This peculiar headache and backache are characteristic of this disease and their intensity is very significant. There may also be chills and pain in the region of the stomach.

The Fever.—The fever is usually high from the beginning and it may reach 104 degrees in twenty-four hours and in forty-eight hours it may be at 105 or 106 degrees and remain about this high until the eruption appears. Then it speedily falls to 99 degrees in moderate cases and to 100 degrees in



CHICKEN-POX.
(2nd or 3rd day.)

(Taken at Ann Arbor, Mich., especially for this book.)

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running cases. It then runs at about this temperature until the pus begins to form when the secondary fever develops which rises to 102 or even 104 degrees but falls back and again rises one or two degrees many times and gradually ends so that by the end of about twelve days there is no fever. It is sometimes difficult to distinguish between small-pox and other diseases. Chicken-pox and measles are sometimes mistaken for it and sometimes small-pox is mistaken for these diseases. It is also sometimes mistaken for a mild case of typhoid fever. A person seldom takes the small-pox more than once. The pulse is rapid and often as high as 120.

The Eruption.—In the majority of cases the true small-pox eruption appears on the third day. At first the eruption may be very scanty and perhaps there are but one or two spots on the face, hand or forearm. It usually appears first on the exposed parts. In other instances the spots are very numerous on the face, the front surfaces of the forearms and on the trunk. These are the parts that are particularly likely to show the first signs of the eruption. In still other cases the surface of the body is sound and the mucous membrane in the mouth and back part of the throat is affected. The parts that are affected the least are the chest and the back surfaces of the legs and arms.

The eruption then proceeds very rapidly through five stages. For the first few hours very small, bright red spots are present which disappear upon pressure. They soon become hard and raise up and form pimples. About twenty-four hours after the appearance of the eruption the pimple begins to show a tiny red watery point on its top and this rapidly develops so that by the fourth or fifth day of the rash the pimple contains a fluid. On about the fifth or sixth day the center of the pimple is slightly sunken. The fluid now becomes cloudy and "mattery" and the surface of the pimple or pock gradually loses its sunken form and by the seventh or eighth day after eruption the pimple has become a pus-pimple and by the tenth day is raised or dome-like and surrounded by redness. In from twenty-four to forty-eight hours the matter escapes, dries, and forms a dirty looking scab from which there comes a distinct odor. Sometimes the pus-pimple does not break but simply dries up and when the scab falls off it leaves a red or pink hollow in the skin which is afterwards called a pock mark. In small-pox when you draw your hand over the pimples, and particularly on the forehead, they feel hardened as though there was gun-shot under the skin. This is one way to distinguish small-pox from other diseases. The rash does not all disappear at once. On some parts of the body there may be watery pimples while on other parts there are pus-pimples.

TREATMENT.—The treatment is good nursing and nourishing food.

Preventive Treatment.—Vaccination. (See this subject following.)

Nursing and Diet.—For the intense itching apply carron oil and, if necessary, add to it one per cent. of carbolic acid. Carron oil is made by taking equal parts of lime water and sweet oil.

For the great pain in the hands and feet and other thick parts hot poultices may be applied or prolonged hand and foot baths of lukewarm water may be employed. Also an ointment of one dram of aristol and one ounce of vaseline may be used.

Dressing for the Face.—Use a mask with holes cut in it for the nose and mouth. On the inner side of this mask should be placed a thin linseed

meal poultice and over this should be smeared vaseline containing iodoform. This should be changed every two hours. The vaseline aids greatly in separating the crusts and leaves the skin free for the application of the dressing which tends to prevent ulceration and the formation of scars.

Mouth.—Rinse the mouth with boric acid solution using one teaspoonful of boric acid to four ounces of water. When the mouth is very dry use flaxseed tea sweetened with a little white sugar and made a little tart with lemon juice.

Pocks.—Do not open the pocks with a needle or knife. Use the above application.

PEOPLE'S HOME REMEDIES.—

1. **Cream of Tartar.**—As a preventive, when small-pox is in a neighborhood, frequently take a little cream of tartar dissolved in water. Use an ounce to a half a glass of water. Some remarkable testimonials have been received regarding cream of tartar as a preventive of small-pox, some even claiming it to be also a cure.

Physician's Remark.—As a physician I cannot see how cream of tartar can cure this disease. It is a mild laxative and affects the blood and kidneys and by keeping the bowels open, the blood in good condition and the kidneys in good working order a person will be more healthy and more able to resist the attacks of any disease.

VARIOLOID.

There are several very mild forms of small-pox and of these varioloid is the most frequent. By varioloid we usually mean small-pox occurring in a person who has been successfully vaccinated but it may also occur in a person who is not naturally susceptible to small-pox. Hence, varioloid and small-pox are one and the same disease, the former being merely a milder form than the latter.

VACCINATION.

Method.—Wash the skin on the arm or leg with soap and water and alcohol. Take off the outer skin (epidermis) from a small place but do not cause much bleeding. Upon this spot put the vaccine point and gently rub it into the part and let dry before putting the clothing on again. Mica shields are now generally placed over the vaccination to protect it from dirt and clothing. Glycerinated vaccine lymph is very good and is put up in small glass tubes. Vaccine is taken from the belly of the cow.

Symptoms.—Three or four days after vaccination the part looks red and this redness increases and there is developed a red pimple which turns to a vesicle or contains a fluid. This increases in size and by the eighth day is fully developed. The redness may extend on all sides for a considerable distance. The spot is painful and the neighboring glands may be swollen and tender, particularly the gland or kernel under the arm if it is the arm that has been vaccinated. About the tenth day the patient may have a slight rise in temperature and suffer some from chills and a tired feeling. Sometimes red spots develop over the body. On about the eleventh or



SMALL-POX.
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twelfth day these symptoms begin to lessen and the pimple or vesicle begins to dry up and is completely dried up by about the end of the fifteenth day. The crust is dark red in color and thin at its edges and in the center. A pink spot is left after the scab falls off and this gradually fades and leaves a pitted mark. Some cases are very mild but some are quite severe.

Secondary Vaccination.—Vaccination the second time does not generally take so well or is not so severe. If one trial fails it should be tried three times. Children should always be vaccinated during the first year of life; or, if exposed to small-pox, they should be vaccinated immediately after birth.

Should We Vaccinate.—Vaccination is certainly a preventive of small-pox. If a person has been exposed to small-pox that person should immediately be vaccinated. It may be too late then to prevent the small-pox but the case will be much lighter. Personally, I believe in vaccination and have been vaccinated a number of times myself. However, I must say that it has a bad effect upon some people. When small-pox is in the neighborhood, if vaccination is ordered for the school children by the authorities, I would advise you to see a good, conscientious physician and have him examine your child to see that it is in condition to stand vaccination. Almost any one can undergo vaccination without serious trouble if he is in good condition and the vaccination is done in a clean manner and with pure material. Everything must be done in a thoroughly clean manner and you must use pure vaccine. Do not get the cheap material but buy it from a reliable firm. I like the lymph the better because it is more likely to be pure. Take care of yourself after vaccination and do not take cold. In most cases where there are bad results I believe it is due either to uncleanness in vaccination or to taking cold afterwards. A doctor should not come into your home from tying his horse or even from walking and begin to scrape or cut for vaccination without first thoroughly washing his hands and boiling his instruments in water. Great attention should be paid to cleanliness if you would avoid serious results.

GRIP.

La Grippe, Influenza.

Description.—The “grip” is produced by a germ and is highly infectious. Epidemics of it occurred in 1830-33, 1836-37, 1847-48 and 1889-90.

Causes.—The germs are usually taken into the system either directly from one who has the disease or through the air. At certain times the atmosphere seems more favorable for the growth and spreading of the germs than at other times.

Symptoms.—The grip develops in from twenty-four to seventy-two hours after exposure and it usually begins suddenly and with chilliness or severe chills followed by severe aching pains in the back and in the legs. The nostrils are inflamed and the fever generally is from 103 to 105 degrees. The patient looks and feels very sick. About this time symptoms appear showing that other parts are affected. Most frequently the respiratory, or breathing, system is affected and in addition to more or less inflammation of the membrane of the nose an acute bronchitis or cold on the lungs develops with a great deal of coughing and sore chest or lungs. The patient is very much depressed or in low spirits and sometimes pneumonia, pleurisy,

or heart trouble develops. The stomach and bowels and whole nervous system are often affected.

TREATMENT.—

Preventive.—Do not take cold or expose yourself to those who have it.

Go to bed and stay there if you can. Even a robust man who fails to rest almost always suffers from a severe attack of grip or from its results and he may be made an invalid for weeks.

What to Do.—Go to bed, take hot drinks and sweat freely.

“What Not to Do.”—Do not take cold after sweating and do not get out of bed too soon or some of the serious after effects may be the result.

Allopathic Treatment.—Little medicine is needed.

For the Aching.—Salicin is a very useful drug for the aching back and limbs. Give five grains in a capsule every five hours. It may be combined with two grains of quinine at a dose. Dovers powders are also good for the aching. Give from two to ten grains twice a day.

For the Bowels.—Keep the bowels and kidneys open. Take seidlitz powders for the bowels or citrate of magnesium if there is bad constipation.

For the Kidneys.—If the urine is acid give five grains of citrate of potash every four hours in plenty of water. If the urine is alkaline, give a five-grain capsule of benzoate of ammonia in the same way.

For the Bronchitis or Coughing.—If the mucus is tough and thick give five grains of chloride of ammonia four times a day with $\frac{1}{4}$ grain of codeine or $\frac{1}{24}$ grain of heroin. This is for coughing in an adult. For persistent cough give five-drop doses of oil of sandal wood four times a day.

Homeopathic Treatment.—Put ten or fifteen drops of the second dilution of Aconite into a glass half full of water and give two teaspoonfuls every hour. This is for the first stages when there is a sore throat and a hot and dry skin. Gelsemium; first dilution. Put ten or fifteen drops into half a glass of water and give two teaspoonfuls every half hour or every hour. This is used more frequently for grip than the Aconite. It is for the tired and languid feeling and for the aching. Sometimes the third dilution of Belladonna is used. It is to be prepared the same as the Aconite or Gelsemium. For painful coughing use the second dilution of Byronia prepared and used the same way. For a tight cough use the third dilution of Phosphorus in the same way.

Nursing and Diet.—Give the corn sweat, hot drinks and lots of water. The corn sweat is described in the Nursing Department. The diet should consist of nourishing foods. A good thing to do when you feel the grip coming on is to go to bed and stay there for a few days. First take a good hot foot bath and at the same time drink a lot of hot drinks such as hot teas or hot lemonade. Take a good sweat, either the corn sweat or by putting hot water bottles or hot bricks about you in the bed. After you are about through sweating have some one bathe you with warm water using either a sponge or cloth. This can be done under the bed clothes so that you do not take cold. After the sweat change the bed covers and night clothes. You can have all the cold water you wish if you drink it often and but a little at a time. The hot drinks are better used while taking the sweat. Open the bowels with salts or castor oil. If necessary, use sweet spirits of nitre for the kidneys. A teaspoonful may be given every three or four hours. Buchu tea or pumpkin seed tea is also good for the kidneys. If

you sweat very much you are not likely to pass much urine for a few hours. Be careful to keep covered after the sweat and remain in bed or, if this is impossible, you should at least remain in a warm room all the next day. If the throat is sore gargle with some of the simple remedies found in this book. Salt, pepper and vinegar make a good gargle and sage tea with a little honey in it is also good.

I was hurriedly called to see a farmer friend one night. He had a hard chill with pain in his lungs and hard and difficult breathing. He had an attack of "grip" and I was afraid it would run into pneumonia and so I directed that he be given a "Corn Sweat" as I have described in the Nursing Department. The patient agreed with me that this saved him many days of sickness. This is a splendid aid in such inflammatory diseases and I freely recommend it in all such cases in the early stage when sweating is necessary.

After Effects.—Sometimes pneumonia and pleurisy go with grip and it is often followed by lung, heart and kidney disorders. So take care of yourself during an attack of grip. Do not take a cold and do not get out of bed too soon. One should not over-exert himself until fully recovered.

PEOPLE'S HOME REMEDIES.—

1 **Quinine and Capsicum.**—Mix twelve grains of sulphate of quinine and three grains of powdered capsicum, divide into twelve pills or capsules and take one every three hours.—

2. **Sweating Remedy.**—Put the patient to bed and surround him with hot bricks or irons until the sweat pours from him. Keep the patient in bed until all moisture is gone and stay in a warm room until well. Allow plenty of fresh air but avoid sitting where the breeze will strike you.

3. **Corn Sweat.**—Take a corn sweat. (The corn sweat has been described in the Nursing Department, so will not be repeated here.)

4. **Mustard Water, Lemonade and Rochelle Salts.**—At night bathe the feet in warm mustard water and drink freely of lemonade. If there is fever take the lemonade cold. In the morning take a dose of rochelle salts.

5. **Hot Teas.**—If the case is severe the patient should go to bed and hot water bottles should be placed at the sides and feet. Also drink pennyroyal, peppermint or sage tea.

6. **Vinegar, Honey and Cayenne Pepper.**—For the sore throat and cough use the following: vinegar, 1 teacupful; honey, $\frac{1}{2}$ teacupful; cayenne, 1 teaspoonful; simmer together for a few minutes and when cool give a teaspoonful whenever the cough is troublesome.

7. **Mullein, Flaxseed and Slippery Elm Teas.**—Produce sweating by bathing the feet in hot water and drinking warm lemonade or a tea made of mullein, flaxseed or slippery elm. Take a mild cathartic.

Physician's Remark.—These sweating remedies aid by helping to throw off the poison from the system.

CEREBRO-SPINAL MENINGITIS—CEREBRO-SPINAL FEVER— SPOTTED FEVER.

Description.—This is an acute infectious disease, often malignant, but not contagious. It runs a rapid course and it is characterized by the muscles

of the back being drawn tight and rigid and a sort of inflammation of the membrane which covers the brain and spinal cord, causing a liquid deposit. It affects children and young people most frequently. It is doubtful if it is taken by one patient from another.

Cause.—Caused by a germ.

SYMPTOMS.—

Moderate Form.—There is a sudden chill which may be preceded by headache and dizziness. The headache rapidly becomes severe and there is also severe pain in the back and down the back of the thighs, the muscles of which are often drawn and fixed. The fever which follows the chill is usually moderate, generally about 102 degrees. As the disease develops the muscles of the back also become tense and hard and likewise those of the neck and arms and finally they become almost rigid and drawn so tightly that the patient may bend backwards.

Malignant Form.—This comes on very suddenly. The chill is followed by headache, unconsciousness, convulsions and death. The patient is overwhelmed by the poison.

TREATMENT.—The treatment is very unsatisfactory. The injection of a certain serum is now being used with good results in a number of cases it is said.

Allopathic Treatment.—Chloral hydrate may be given in doses for adults of 20 grains by the mouth or 60 grains as an injection, in starch water. The excessive pain may be relieved by giving from $\frac{1}{4}$ to $\frac{1}{2}$ grain of morphine by the mouth. Apply an ice bag or anything cold to the neck and back. Relief from the severe pain may be had in some cases by putting the patient for a long time in a hot bath. Either plain or salt water may be used and it should be at the temperature of about 99 or 100 degrees.

Homeopathic.—Put ten or 15 drops of the second dilution of Aconite into half a glass of water and give two teaspoonfuls every hour. This is to be used at the beginning of the attack and later use the second dilution of Bryonia in the same way.

ERYSIPELAS.

Description.—This is an acute infectious disease. It is an inflammation of the skin and tissue beneath.

Causes.—It is caused by a specific agent and may be carried to another by the poison coming in contact with a sore or break in the skin. Some people take the disease very easily.

Symptoms.—The skin is bright red and swollen and the disease may last from one to two weeks. In the majority of cases it affects the skin of the face, the cheek, near the ear or about the corners of the nose. A tingling is first felt which speedily becomes an intense burning and is made worse by rubbing and scratching. At the beginning of the attack, people who have not had it before may think they have been stung by some insect or perhaps they may think they have been scratched by something. If it keeps on spreading any one should know what it is. It is a disease that will bear close watching especially when it is around the face. It spreads very rapidly and by the end of twenty-four hours, or even before, there is a sharp line mark-

ing the boundary of the affected parts so that you can tell distinctly where it begins and leaves off. This is characteristic of the disease. The face, and especially the ears, when affected become very much swollen. Sometimes blisters form. There is little or much chilliness according to how severe the case is. There is sometimes high fever, a rapid pulse, great weakness and delirium. The severity of these symptoms varies a great deal in different cases. Erysipelas is a dangerous disease when it occurs in people suffering with some chronic disease like liver trouble or Bright's disease. It should always be watched carefully when it gets near the ears.

TREATMENT.—

Preventive.—A person who has once had erysipelas is very likely to take it again and should not come near a person who has it.

To prevent its spreading I have often painted the healthy skin half an inch away with tincture of iodine. Of course iodine discolors the skin and when used on the face often leaves marks.

Allopathic Treatment.—If the bowels are not active they should be moved freely with a two grain dose of calomel followed in twelve hours with a seidlitz powder or half an ounce of rochelle salts. Then give ten drops of the tincture of chloride of iron every three hours. This should be well diluted with water and should be given through a tube as it will injure the teeth if it comes in contact with them. As a local treatment an ointment made of equal parts of ichthyol and either lard or lanolin may be smeared over the inflamed parts and the healthy skin nearby. Also smear this ointment on a mask made of gauze or lint and apply to the parts so that the effect will continue longer. A good quality of either brandy or whiskey may be used internally if necessary.

Homeopathic Treatment.—For the bright redness and throbbing headache give the third dilution of Belladonna. Put ten to fifteen drops into half a glass of water and give two teaspoonfuls every one to two hours. If there are many watery pimples and much swelling prepare and give the sixth dilution of Rhus. Tox. in the same way. If the urine burns give the third dilution of Cantharis in same manner. If there is a swollen, puffed skin, pain in passing urine and trouble with the kidneys give the third trituration of Apis. Mel. Give one tablet every hour. A cranberry poultice is good when applied locally.

As illustrating the result of carelessness in treating erysipelas I will relate an incident that occurred in my early practice. I was called to see an Irishman by the name of "Murphy." Mr. Murphy, in his peculiar dialect which I shall not attempt to imitate said, "Doctor, I have a bad cough." "So I see," I replied. "And I feel real sick and feverish." "Yes," I said, "but what are those scales on your face and ears?" "Oh, I had erysipelas but a 'pow wow' person cured that. The erysipelas is all right since the pow wowing drove it away but my cough bothers me. Give me something for that." I gave him some medicine and on my visit next day the cough was gone. Mr. Murphy said, "My cough is gone, doctor, but look at my blooming face and ears." It was as I had suspected. The erysipelas had "gone in" and that was what caused the cough. The medicine I had given him was to bring out the eruption again and this cured the cough. Mr. Murphy then depended upon the doctor to cure the erysipelas which the "pow wow" person had merely driven in.

PEOPLE'S HOME REMEDIES.—

1. **Chalk, Magnesia, Soda; also Catnip, Boneset and Tansy Tea.**—For the sour stomach give chalk, magnesia or soda. The vapor bath will give relief when the eruption appears. If on the face or head steam the parts over a decoction of catnip, boneset or tansy, several times daily.

2. **Cranberry Poultice.**—Boil a quart of cranberries until soft, mix with flour and apply to the parts.

Physician's Remark.—This relieves the pain and burning and is one of the best local remedies known.

3. **For the Burning and Itching.**—To relieve the burning and itching add a little vinegar to equal parts of blood root and tincture of lobelia and apply three times a day; or, a decoction of mayweed and smartweed may be applied cold; or, apply rye meal, powdered starch or a tea made of buckwheat meal.

4. **Weak Lye Water.**—Bathe the parts once a day in weak lye water.

5. **Blue Flag, Yellow Dock, Bittersweet, Burdock, Sassafras and Elder Flowers.**—Take one ounce each of coarsely powdered blue flag root, yellow dock root, bittersweet root, burdock root and sassafras bark and add two ounces of elder flowers and three quarts of boiling water. Cover and let steep for twenty-four hours; then press and strain and take a wineglassful three times a day.

Physician's Remark.—This is good for the blood, especially for chronic troubles.

6. **Mustard.**—If the disease should be driven in rub the affected parts with mustard and immerse the whole body in hot water.

7. **Tallow, Lard, Cold Cream, Flaxseed, Slippery Elm Bark.**—Remedy the burning by applying tallow, lard or cold cream. A mucilage made of either flaxseed or slippery elm bark will do as well.

8. **Tea made from Bark of Burr Oak.**—With a tea made from the inner bark of the burr oak tree make a bread poultice and apply to the parts.

9. **Lemon Juice and Brandy.**—Add the juice of two lemons to a gill of brandy and keep the affected parts well moistened. If this is too strong a gill of water may be added. Sometimes drinking lemonade is beneficial.

10. **Hot Milk.**—Apply hot milk or hot buttermilk to the parts. Glycerine applied several times a day is also good.

11. **Flour.**—Flour dusted upon the parts sometimes gives relief.

12. **Poke Berry Poultice.**—Mash a handful of poke berry roots in a pint of sweet milk and apply to the inflamed parts. A lady in Indiana says she has never known this remedy to fail and she has tried it several times.

13. **Starch and Flour.**—Keep the parts covered with powdered starch or scorched flour. This is to shield it from the air and light.

14. **Cleaver's Root Tea.**—For internal use make a tea of cleaver's root and take from two to four ounces three or four times a day. This tea is made by steeping 1½ ounces of the herb in a pint of boiling water.

15. **Herb Tea.**—At the beginning of the disease make a tea by steeping equal parts of cleaver's root, maiden hair and elder blows in warm water for two or three hours. When cold it may be drank freely.

16. **Buttermilk.**—Dip a cloth into buttermilk and apply to the parts.

17. **Salt and Vinegar.**—"Bathe the parts frequently with salt and vinegar," writes a lady from Columbus, Ohio.

ACUTE INFLAMMATORY RHEUMATISM—ACUTE ARTICULAR RHEUMATISM—ACUTE RHEUMATIC FEVER.

Description.—This disease occurs most frequently in the cool, damp months. It most often occurs between the ages of twenty and thirty-five years and seldom after the forty-fifth year. It does not often occur in children. Males are affected more than females. It was formerly thought that the disease was due to too much uric acid in the blood but this belief is now losing ground and it is thought the infection gets into the general system through the tonsils.

Symptoms.—The disease usually comes on suddenly. The patient may awake to find one or more of his larger joints very much inflamed and that any movement causes great pain. The part may be so sensitive to the touch as to prevent any examination by touching or handling. The skin over the parts is dusky and quite puffy and hotter than other parts. There is fever, the tongue is coated, the bowels constipated and the skin hot and dry or bathed with a sticky sweat with a bad odor. This sweating does not relieve the patient. There is not much water passed and what there is looks like coffee. The inflammation quickly spreads to other joints and may go through the joints of the whole body one or more times. The joints that were first affected are generally a little easier when the inflammation goes to other joints. After a person has had an attack of inflammatory rheumatism he is more subject to it than before. The disease may last only a week and it may last for months. It is terribly painful and requires more than the patience of Job to bear the suffering without the use of words that would not look well in print.

TREATMENT.—

Preventive.—Do not catch cold in any way. A person should not come in from work or exercise all heated and sit down in a draught to cool off. Do not get the feet and limbs wet and then neglect to change your clothing. Some people go around all day at work or sit in school all day with wet shoes and stockings and then wonder why they have rheumatism. One who has once had the disease should be especially careful about these things for he will be more subject to it than before. Do not sleep in a "spare bed" without first thoroughly airing and drying the bed clothes. One who is subject to rheumatism should always sleep upstairs as it is not so likely to be damp as are the rooms which are on the first floor. All these things should be carefully looked after for rheumatism is more easily prevented than cured.

"What to Do."—Drink large quantities of water. Give nutritious foods and good nursing.

"What Not to Do."—Do not be cross with the patient.

Allopathic Treatment.—Give salicylate of soda in five to ten-grain doses from 3 to 6 times daily. Larger doses may sometimes be used or smaller doses may be given more often. This medicine is very effective but frequently the stomach will not stand it. Give it in capsules and follow with large quantities of water or milk to prevent its irritating the stomach. To prevent heart trouble, from four to six small fly blisters may be placed over the heart. While giving the salicylate of soda give forty grains of common baking soda in each twenty-four hours. If the salicylate of soda does not begin to help in four or five days you should stop using it and

give ten drops of wine of colchicum root and fifteen grains of iodide of potassium three times daily.

Homeopathic Treatment.—During the whole course of the disease use the second dilution of Aconite. Put ten to fifteen drops into half a glass of water and take two teaspoonfuls at a dose. Alternate this every hour with one of the following medicines according to the symptoms. These medicines should be prepared the same as the Aconite. If there is a throbbing pain in head and the parts are red use the third dilution of Belladonna with the Aconite. If any motion makes the person worse use the second dilution of Bryonia. If the patient is better after moving a little but restless when quiet use the sixth dilution of Rhus. Tox. If the patient is very restless and thirsty use the third trituration of Arsenicum. As before stated, one of these, according to the symptoms, is to be alternated with the Aconite.

Nursing and Diet.—Nursing is an important factor in this disease but there are few nurses who have the required patience. Remember that the patient is suffering intense pain. Sometimes moist applications to the joints aid in easing the pain. Again, binding the exposed parts with cotton batting is good. The feet and hands may be covered with this. Even the jar of your walking on the floor hurts the patient, so when you try to lift him be very careful about it and do not lose patience if he gets angry. I have had inflammatory rheumatism myself and know that the pain is agonizing. You need plenty of pillows to put under and around the patient. Arrange and rearrange them to suit the patient and do not be angry if you do not suit him the first time. There is only one that can and must have patience and that is the nurse. The sick one is suffering too much to think about patience. Keep visitors out and the patient will rest and sleep better. See that the bowels move every day and that the kidneys work well. Give plenty of water. Watch the heart and if you see the bed clothes shaking from its hard beating it is then time to give heart remedies. I never like to give opiates during this disease for sometimes they affect the heart so as to hide the symptoms that show its condition.

In the first year of my practice I was taken with inflammatory rheumatism in January. In April we moved into a large brick house with closed blinds and surrounded by shade trees. I had no time to recover entirely from the rheumatism. In the summer I would come into the house sweating and sit down and of course became stiffer and stiffer with the rheumatism. The house was cool, damp and musty but very pleasant after being out in the hot sun. We finally decided I could not get better in this place and so left it. It was a damp house but the admittance of sunshine through open windows and care on my part would have made me well. I was a victim of my own carelessness. A damp, musty, cold house with the sunshine and air shut out will help along any case of rheumatism. This disease flourishes on such treatment. Get into the air and sunshine and sleep upstairs in a warm room, you rheumatic people. Most of our ills are of our own making and yet we wonder how such things can be. If we will, we can generally find the cause of our ailments in our own carelessness.

After Effects.—The cause of death in this disease is generally the heart trouble which it brings on. Disease of the valves and muscles of the heart and of the membrane surrounding it (pericardium) is often the result of this disease. The heart should be carefully watched both during and after an attack of inflammatory rheumatism.

DYSENTERY.**Bloody Flux.**

Description.—The disease is characterized by diarrhea, pain in the abdomen and the presence of mucus in the stools.

Causes.—Getting wet and taking cold, improper food and poor drinking water.

Symptoms.—Sometimes it comes on suddenly and sometimes it develops gradually from diarrhœa. One feels wretched and in the first stages often has griping pains in the abdomen. After a time the stools become scanty and are mostly liquid or mucus and often there is passing of blood. The griping pains become more severe and there is intense straining at stool which causes the patient to break out in a profuse sweat. There is a constant desire to have the bowels move and there is also difficulty and pain in passing urine. The tongue is foul and dry.

TREATMENT.—

Preventive.—Use boiled water in hot weather and eat properly cooked foods. Avoid cold and wet and see that there is proper drainage.

“What to Do.”—Find out the cause if possible and remove that. Look to the diet and the drinking water. Give a laxative to remove irritating material from the bowels. Remain quiet during the attack.

“What Not to Do.”—Do not eat anything during the attack if you can avoid it. Do not drink unboiled water. Do not strain at stool. Do not get wet or take cold.

Allopathic Treatment.—Give intestinal antiseptics. Salol is good when given in five-grain doses three times a day. Subnitrate of bismuth may be given in from five to ten-grain doses every three hours. A good combination is powdered ipecac and opium, $\frac{1}{2}$ dram; subnitrate of bismuth, $\frac{1}{2}$ ounce; and salol, $\frac{1}{2}$ dram. Mix all thoroughly and make twelve powders and give one every two hours. Give injections high up in the bowels. Sometimes an injection of sulphocarbolate of zinc is good. Use twenty grains in a pint of water. A fountain syringe should be used. Oil of fireweed every three hours is also good. Give five drops on a lump of sugar.

Homeopathic Treatment.—For the griping and straining give the third trituration of Mercurius Sol. The dose is one tablet every two to three hours. If the griping and straining are severe give the third trituration of Mercurius Cor., in the same way. If there is great thirst and restlessness and watery, bloody and burning stools give the third trituration of Arsenicum in the same way. The Mercurius Sol. is generally the one to be given in the first stages.

Nursing and Diet.—First find out what the patient has been eating to cause the attack and avoid it. I first like to give something to get rid of all putrid food in the bowels. Give half an ounce of castor oil to an adult or a teaspoonful to a baby. It will push out all irritating matter from the bowels and will frequently stop the worst attack and you can then give your medicines. Spiced syrup of rhubarb is a pleasant medicine for those who cannot take the castor oil. Oil of fireweed in five-drop doses on a little sugar, for an adult, is very good when given four hours after the castor oil or the rhubarb is taken. You can give this every three hours if necessary.

Do not feed any solid foods and give nothing at all if possible. If something is necessary give hot water or egg albumen or hot diluted milk. Barley water, oatmeal water or rice water is good. Directions for making these will be found in the Nursing Department. Lime water mixed with the milk is good. Sometimes blackberry wine does good. It is a little astringent and is also a food.

PEOPLE'S HOME REMEDIES.—

1. **Castor Oil and Paregoric—Flaxseed or Slippery Elm Tea.**—If the case is not severe give a teaspoonful of castor oil and two teaspoonfuls of paregoric once a day. Flaxseed or slippery elm tea may be drank. It is also well to inject the bowels with starch water with half a teaspoonful of laudanum in it.

2. **Golden Seal.**—A tea made of golden seal is an excellent injection for chronic dysentery.

Physician's Remark.—In large doses golden seal is constipating and it is a tonic to the membranes of the intestines.

3. **Blackberries.**—Take two quarts of ripe blackberries, a pint of loaf sugar and one-half ounce each of cinnamon, cayenne, cloves and allspice. Boil these together; strain when cold and add a pint of fourth proof brandy. According to the age take from a tablespoonful to a wineglassful at a dose.

Physician's Remark.—All these are stimulating and somewhat binding in their action.

4. **Rhubarb.**—If the case is not severe, burned rhubarb is good. (This is given under "Diarrhea.")

Physician's Remark.—The rhubarb removes the irritating material from the bowels.

5. **Flaxseed or Slippery Elm Tea.**—Watch the diet and after each movement of the bowels give an injection of flaxseed tea or slippery elm tea made from the water taken off of oatmeal.

Physician's Remark.—This not only washes out the irritating material but it is also soothing to the bowels.

6. **Golden Seal, Saleratus, Charcoal and Rhubarb.**—For obstinate cases take half a teaspoonful of golden seal, a piece of saleratus the size of a hazelnut and a tablespoonful each of powdered willow charcoal and turkey rhubarb. Put these into a tumblerful of water and let stand for twelve hours. Stir and take a teaspoonful every four hours during the day.

Physician's Remark.—Golden seal is a little binding, charcoal is an antiseptic and rhubarb is laxative and rids the bowels of irritating material that is so often the cause of dysentery.

7. **Eggs.**—Beat up an egg, with or without sugar, and take it at a single gulp. It seems to form a coating on the stomach and intestines, lessen inflammation and effect a speedy cure. Two or three taken during the day is generally all that is necessary.

Physician's Remark.—This is easily digested and is not likely to irritate.

8. **Elm Bark, Rhubarb, Charcoal, Salt and Yolk of Egg.**—Take powdered elm bark, rhubarb and charcoal, of each half an ounce; add a tablespoonful of common salt and the yolk of an egg and rub the whole together in a mortar until dry and reduced to a well-mixed powder. Dose—A teaspoonful three to six times a day, according to circumstances, in a little water

or molasses. Valuable in dysentery or flux and in diarrhea. It seldom fails to cure.

Physician's Remark.—The elm bark is soothing, the rhubarb is laxative, the charcoal is antiseptic, the salt is astringent or binding and the egg is food.

9. **Camphor, Peppermint, Red Pepper, Etc.**—Take one ounce each of laudanum, rhubarb, tincture of camphor, peppermint and red pepper. Give twenty to thirty drops every half hour until relieved.

Physician's Remark.—This is for adults only.

10. **Chickweed Tea.**—Steep chickweed and drink of the tea.

11. **Hot Fomentations, Etc.**—Much relief is generally obtained from hot fomentations applied to the bowels by means of cloths wrung out of hot water and, when the bearing down is very severe and produces much suffering, make use of an occasional injection of twenty drops of laudanum to one or two tablespoonfuls of starch water or rice water.

12. **Oil of Fireweed.**—Put five drops of oil of fireweed on sugar and take every one to three hours.

Physician's Remark.—This is very good and you will notice that I have given it as one of the remedies used by myself and other doctors.

13. **Mountain Clove.**—Use a root called "Mountain Clove." Chew the root or steep it and drink the tea.

14. **Hot Herb Tea.**—Take a weed called "horse tail" which has a long straight stalk with a feathery leaf and a slightly hot taste. Make a tea of this and drink a teacupful while hot.

15. **Pathweed Tea.**—Make a tea of pathweed, using four ounces of the plant to a pint of water, and take two ounces at a dose three or four times a day. This is the dose for adults.

SYPHILIS—POX—LUES.—(See Chapter for Men.)

TUBERCULOSIS.

Description.—This is an infectious disease in which there is local inflammation followed by the development of dead tissue. Small nodules, called tubercles, develop and these have the appearance of gray, white or sometimes yellowish bodies. It is because of these tubercles that the name "tuberculosis" is given to this disease.

Causes.—The disease is caused by the tuberculosis germs. These germs are always at hand and are constantly being taken into the system but the tissues of the body are not always in the right condition for them to take hold and develop. These germs are taken into the body in the air we breathe and in the food we eat. Milk from cows having tuberculosis is dangerous. A person may also accidentally become infected by the germs getting in through a sore or scratch on the body and the germs also gain admittance through the tonsils and back part of the throat. As before stated these germs are constantly being taken into our bodies, most commonly by breathing, but when we are in health we are generally able to throw them off or at least the conditions are not favorable for their growth and development. It is like sowing seeds in the ground. They will not grow unless the conditions, such as heat and moisture, are right. The germs

will not grow in our systems unless we are in a weakened condition in some way or in some part of the body.

Anything which weakens our vitality or impairs our health makes us more likely to take tuberculosis. All diseases which leave us in a weakened condition produce favorable conditions for these germs because our system is not then able to throw them off as they enter the body. Pneumonia, catarrh, grip, measles and whooping cough are particularly likely to leave the parts affected in a weak condition and render them more subject to tuberculosis. Breathing bad air, and particularly the air from a poorly ventilated room where many people are crowded together or the dusty air of a city, is a source of great danger. The lack of proper exercise allows the lungs to become weakened, hence the blood is not purified and our health is weakened so that we are more likely to take this disease. Continued heat also weakens the system and particularly if we are compelled at the same time to breathe impure air. Some people inherit a weak constitution and are thus more subject to the disease than one who is naturally robust.

Age also has something to do with it. Children under ten years of age frequently have tuberculosis of the glands and bones and also of the membranes of the brain. After the age of puberty the lungs are the most frequently affected. Tuberculosis can affect almost any part of the body. It generally affects the weakest parts. After the age of thirty-five we are not so likely to take the disease and after the age of fifty a person seldom has it unless he had it before that time. It affects both sexes equally. Certain occupations such as stone cutting, knife grinding, mining, weaving and all pursuits which cause large quantities of dust to enter the lungs are particularly dangerous.

We will first take up the symptoms of the different kinds of tuberculosis with something of the treatment of each and then discuss the prevention and general treatment of the disease together with the diet to be allowed the patient.

Acute Miliary Tuberculosis.

Description.—This consists of innumerable small tubercles in the lungs or other organs affected.

Cause.—The tuberculosis bacilli or germs are the cause. They infect the organs and cause the tubercles.

Symptoms.—The symptoms are like the symptoms of typhoid fever. The poison in the blood causes great wretchedness and the fever runs from 102 to 103 degrees every morning. The pulse is rapid and there is often a great deal of sweating. These symptoms appear before there is illness in any particular part of the body to explain the sickness. The fever is irregular and can be lowered by sponging with cold water. In both of these respects it is unlike typhoid fever. Also, the rose spots are absent. A careful examination of the lungs shows diseased spots. In some cases it comes on more suddenly. The patient is seized with a chill, which is followed by high fever or a rapid pulse. There is much sweating and great weakness. The patient is fearfully thin. The tongue is dry and cheeks flushed. When it is miliary tuberculosis of the lungs, the lung tissues are affected and there are

symptoms of acute bronchitis. The patients usually die in from one to three months. The disease is almost, if not always, fatal.

Treatment.—Give nourishing food and stimulants. Chloral hydrate and the bromides are given to relieve the restlessness.

Scrofula—Tuberculosis of the Lymph Glands.

Description.—This is often a very mild form of tuberculosis and but a small percentage of the patients die with it. In exceptional cases we find nearly all the lymph glands of the body affected while other parts of the body are affected but little, if any. We will treat of several forms of this disease.

Local Tuberculosis—Adenitis (Glands).

1. **Cervical or Neck Glands.**—This is the most common form met with in children. It is particularly frequent among those who are in poor circumstances and have poor surroundings. The enlarged glands are commonly called “kernels.” Sometimes they run together and form large lumps. Matter forms and runs from them and they later heal up and leave a scar.

2. **Trachea-Bronchial.**—The glands of the windpipe and bronchial tubes sometimes become large and press very much upon the blood vessels of the chest and also upon the nerves. Sometimes they burst into other organs like the gullet or they may infect the lungs and pleura. They also frequently cause pericarditis by coming in contact with or breaking into the membrane which surrounds the heart. They become very dangerous when they infect the whole system through the blood vessels.

3. **Mesenteric, or “Tabes Mesenterica.”**—The mesentery is the structure which is intertwined among the intestines. This disease was called “abdominal scrofula” by the old writers. The glands in the membrane between and around the bowels become enlarged and cheesy and occasionally they form matter and become hard. Upon examination after death a slight form of this disease is often found in children who have died of other diseases. The disease is very common in children and seriously interferes with nutrition so that the little ones become puny, wasted and bloodless. The abdomen is enlarged and bloated, there is constant diarrhea and the stools are thin and have a bad odor. General wasting away and weakness are the most characteristic features. Children with this disease are improperly said to have consumption of the bowels. In adults it may occur alone or in connection with lung disease.

Water on the Brain—Tubercular Meningitis—Basilar Meningitis.

Description.—This is also known as acute hydrocephalus. It is really an acute tuberculosis in which the membranes of the brain and sometimes the spinal cord are mostly affected. It is much more common in children than in adults. It rarely occurs during the first year but is more frequent between the second and fifth years. In a majority of cases old tuberculous trouble in the bronchial and mesenteric glands is found.

Symptoms.—There has been failing health for several weeks or the child may be getting over measles or whooping cough. Sometimes it has previously had a bad fall. The child is listless, peevish, irritable and has lost its

appetite. The symptoms pointing to the disease may then set in suddenly with convulsions, or more commonly with headache, vomiting and fever. The pain may be intense and agonizing. The child puts its hand to its head and gives a sharp sudden cry and sometimes screams. It is usually constipated and there is slight fever which gradually rises to 102 or 103 degrees. The pulse is rapid at first but later becomes irregular and slow. During sleep the child is restless and disturbed with twitching of the muscles and sudden startings, or it may wake up in great terror. In the early stages the pupils of the eyes are contracted. The first stage is the stage of irritation.

During the second stage of the disease these symptoms disappear. The abdomen (or belly) is drawn in, the bowels are constipated, the child is dull, and when aroused is more or less delirious. The head is often drawn back or to the side and the child utters an occasional cry. The pupils are enlarged or irregular and a squint may develop. Convulsions may come on or the muscles of one side or limb may become rigid. During the last period or stage of paralysis the stupor, or deep drowsiness, increases and the child cannot be aroused. Convulsions are rather frequent and there is a sudden drawing up of the muscles of the back and neck or the spasms may occur on one side only. The pupils are enlarged, the eyelids partly closed and there is rolling of the eyeballs. There may be diarrhea, the pulse is rapid and the child sinks gradually away. The disease lasts from 2 to 4 weeks. It is fatal in most cases.

Tuberculosis of the Pleura—Acute Tuberculosis of the Pleura.

The acute kinds are rarely fatal. The secondary kind is very common and frequently occurs when there is tuberculosis of the lungs.

Tuberculosis of the Pericardium.

This may be primary or it may be secondary from other affected parts. It is not so common as tuberculosis of the pleura and peritoneum.

Tuberculosis of the Peritoneum.

It frequently occurs in connection with miliary and chronic tuberculosis of the lungs but may occur in itself apart from other organs. People of all ages are subject to it and it is common in children with bowel and mesenteric disease.

Symptoms.—It is very difficult to distinguish this disease. When it comes on slowly the symptoms resemble typhoid fever. There is frequently some bloating or dropsy of the abdomen or belly. Wind-dropsy, or tympanites, may also be present. Sometimes the fever is slight but in acute cases it is often 103 to 104 degrees. The physician may use the tuberculosis test in this disease.

Galloping Consumption—Acute Pneumonic Tuberculosis of the Lungs.

This is met with both in children and adults. There are two types—Pneumonic and Broncho-Pneumonic.

Symptoms of Pneumonic Form.—The symptoms are somewhat like pneumonia but between the 8th and 10th days instead of getting better they be-

come worse. The fever is irregular, the pulse more rapid, there is spitting of mucus and pus and there may be sweating. Signs occur indicating softening of the lungs and death may occur even in the second or third week and before softening of the lungs. In other cases the upper part of the lungs is destroyed and the case may drag along for two or three months or it may become a case of common consumption.

Symptoms of Broncho-Pneumonic Form or Capillary Bronchitis.—This is more common in children and forms the majority of the cases of galloping consumption. The symptoms vary greatly in different cases. In children the disease is most likely to follow some infectious disease like measles or whooping cough. The child may be taken suddenly ill while teething or when recovering from the attack of some fever. The fever rises rapidly, the cough is severe and a rattling breathing is noticed at one or both points of the lungs. Or the child may be taken ill when getting better from some other infectious disease. There will be fever, coughing and shortness of breath. These symptoms lessen within two weeks. There is loss of flesh and the general condition is bad. The child has sweats, the fever becomes hectic, that is, a hectic, or red spot appears on the cheeks and the child has the usual consumptive look.

Chronic Ulcerative Tuberculosis of the Lungs.

Physical examination shows the parts that are affected. There is a hardness of the lungs and they contain cavities.

Symptoms.—There may be a troublesome pain early in the disease or this may be absent. The cough is one of the earliest symptoms and is present in the majority of cases from the beginning to the end of the disease. The sputum, or spit, varies greatly but it contains the bacilli or germs. There is often hemorrhage or spitting of blood from the lungs. This is called "Hemoptysis." There is fever and difficult breathing. The sweating is distressing and weakening.

Tuberculosis of the Liver.

This does not occur alone but as a part of a general miliary tuberculosis.

Tuberculosis of the Joints and Spine.

These will be treated in another place.

THE TREATMENT OF TUBERCULOSIS.

Preventive Treatment.—A person with tuberculosis should expectorate (spit) into cloths or into paper spitting cups and then before the sputum or spit dries these should be burned. The sputum or spit can only spread the disease when it is dry. Sunlight, nourishing food and outdoor life are the best preventives. Breathe plenty of fresh air and especially should the sleeping room be well ventilated. A boy or girl who is weak and sickly looking should be in the open air most of the time. Girls, at the time their menses are beginning, should take all the care possible to keep themselves strong and healthy and especially if there has been any tuberculosis in the

family. Sunshine and air make people strong. In the tenement districts of our cities many people are crowded into a few rooms that often are dirty and unventilated and oftentimes eight or ten or more sleep in one small room with scarcely any ventilation. Their food is unwholesome and often small in quantity and yet many of them have to work all day and part of the night for even such a living as this. Such conditions are particularly favorable for the development of tuberculosis or consumption. To crowd too many children into a school building is poor policy and to overwork them is just as bad and especially when it is considered that many of them are improperly nourished. I once knew of a young man who was ambitious for an education but the only way to get it was to earn it himself. He was apparently the picture of health and was much stronger than the average college student. He loaded himself down with studies and after school hours and on Saturdays he worked at hard manual labor to earn money for himself and for his people at home whom he had to help support. His lessons were read at night and in some way he also managed to take music lessons as he was naturally a fine singer. He seldom got more than five or six hours sleep and often not that while doing the hardest kind of mental and physical labor. Often but a sandwich or a few crackers made up his meal and sometimes he would skip a meal. Within one year from this time his school mates and teachers were very much surprised and pained to learn that he had been sent home to die with consumption. Learning is worth getting but we can pay too high a price for even an education.

Then, if you would prevent consumption, live in the open air and sunshine as much as possible, take at least enough exercise to keep healthy, have plenty of ventilation in your houses and especially in the sleeping rooms, eat plenty of nourishing food and do not break down your health with work, worry or bad habits.

General Treatment.—With nourishing foods and proper conditions make the patient grow fat and the local disease will take care of itself. Place the patient where he will get plenty of nourishing food and where the surroundings will be as pleasant and cheerful as possible. Give proper open air treatment. Live out door in the fresh air and sunshine and sleep in a tent or with the windows open so as to allow plenty of fresh air. Go to a tuberculosis sanitarium if you can or go to a climate where the temperature is even and the atmosphere pure. Have plenty of fresh air, sunshine and a nourishing diet. Milk, eggs, cereals, beef, etc., are good foods if they agree with the patient.

We herewith give a nourishing diet for tuberculosis patients. It may be varied to suit the individual case.

DIET FOR TUBERCULOSIS PATIENT.

Breakfast.—Sip a cupful of hot milk in the morning before rising; rest in bed for 15 to 20 minutes; then bathe or be bathed and clothed by another. For breakfast eat wheaten grits, oatmeal or some other cereal. If the appetite is good a tender chop or small piece of steak may be eaten. Tea or coffee may be drank unless they make the patient nervous. An orange or some other fruit may be eaten if desired. The patient should not eat so much as to make the meal lay heavy on the stomach.

Half way between breakfast and the mid-day meal he should eat a light luncheon consisting of a cup of broth, a piece of toast, a glass of koumyss or a sandwich made with scraped beef or, if he tires of this, a sandwich made with toast and either anchovy or caviar may be substituted. Often an egg, either raw or cooked, may be taken between meals with advantage. If desired, a glass of sherry or some red wine may also be taken at this time or, in its place, some Scotch or rye whisky may be given.

Dinner.—This should be the heaviest meal and should be eaten between 12 and 2 o'clock. Some nutritious and somewhat stimulating soup that is easily digested may be eaten first. This may be followed with a small piece of fresh fish and then by a hearty course of any one of the roasts or broiled meats accompanied by two or three wholesome vegetables such as potatoes, string beans, asparagus, spinach, carrots, etc., and also macaroni or similar foods. Particularly if the patient is accustomed to stimulants with his meals, a little sherry wine or whiskey and water may be taken. Cornstarch or rice pudding or some similar dessert may also be eaten.

During the afternoon a light luncheon similar to the forenoon lunch may be taken two or three hours after dinner.

Evening Meal.—This should be a light meal consisting of arrowroot, or an egg cooked in some simple way, or a few stewed oysters or milk toast.

Again, before going to bed at night, a cup of broth, a glass of koumyss, a cup of hot milk or some curds and whey may be taken.

This diet is intended for a person with good digestion.

MEDICINES FOR TUBERCULOSIS.

For the Blood.—Arsenic may be given in small doses in the form of Fowler's solution of arsenic. Give 5 drops, four times a day.

For the Heart.—If necessary, give tincture of digitalis in 2 or 3 drop doses, 3 times a day.

For the Night Sweats.—Give from 15 to 20 grains of camphoric acid 2 or 3 hours before the time for the sweat. Or, in its place, give 1/120 of a grain of atropine.

For the Fever.—Sponge with tepid or warm water and alcohol.

For the Cough.—If necessary, give from 1/24 to 1/16 of a grain of heroin 3 or 4 times in 24 hours. If the cough is dry and irritable use the steam kettle. Put from 1/2 to 1 dram each of creosote, oil of pine and oil of eucalyptus into a teakettle of hot water and let the patient inhale the steam. One end of a roll of paper may be put over the spout of the kettle and the patient may breathe through the nose and mouth from the other end.

For the Vomiting.—If the stomach is irritated give from 2 to 5 grains of subnitrate of bismuth and 1 to 2 grains of oxalate of cerium an hour before meals. If the stomach is depressed give 1 to 2 drops of Fowler's solution of arsenic before meals.

For the Bleeding from the Lungs. (Hæmoptysis.)—If the patient is much frightened give a hypodermic injection of 1/8 of a grain of morphine.

Treatment of the Cervical Glands.—Surgeons advise cutting them out but in many cases this is not necessary. The homeopathic treatment is by use of the 6th trituration of Calcarea Carb. Give 2 tablets four times a day. I know this to be good for I have often used it with success.

PEOPLE'S HOME REMEDIES FOR CONSUMPTION AND ITS ATTENDING AILMENTS.—

1. **Blood Root, Wild Cherry, Etc.**—Take tincture of blood root and muriate of ammonia, of each 1 dram; fluid extract of wild cherry, 3 drams; and infusion of licorice, $\frac{1}{2}$ pint. Mix and give a tablespoonful every two hours.

2. **For the Bleeding from the Lungs.**—Give a little salt water or a tea made of equal parts of bugle weed and beth root.

3. **For the Cough.**—An excellent remedy is a tea made from the leaves of white horehound and sweetened with honey.

4. **For the Cough.**—Teas made from flaxseed, quince seed, slippery elm or marshmallow will prove excellent for the cough.

5. **Cod Liver Oil.**—A tablespoonful or more three times a day, is a treatment used a great deal by physicians.

6. **For Scrofula.**—Take one ounce of the dried or two ounces of fresh yellow dock root and boil in a pint of water. This may be taken in 2 ounce doses as often as the stomach will bear. The skin may also be bathed with this tea. This is a very effective remedy for scrofula.

Physician's Remark.—Yellow dock root is very good for the blood.

7. **For Scrofula.**—Take one part of finely powdered saltpeter, and two parts each of licorice root, sulphur and cream of tartar; mix with honey until it is like mud. Take a teaspoonful before each meal for three days, then leave off for three days, and so continue until cured. If the bowels are too loose after taking the first three days, then reduce the dose one half. This treatment has effected some remarkable cures after other remedies had failed.

8. **For White Swelling and Scrofula.**—Boil in a little water a good sized handful each of the bruised roots and twigs of bitter sweet, the inner bark of sweet elder, and mullein leaves; add half a handful of golden seal root, two rounded teaspoonfuls of mutton tallow and the same quantity of fresh unsalted butter. Stew these together until dry, being careful not to burn. Strain, put back on the stove and add a tablespoonful of beeswax and half a tablespoonful of pine pitch. Spread on a cloth and apply to white swelling or put on cotton and apply to the sores of scrofula.

Physician's Remark.—White swelling is tuberculosis of the knee joint

TYPHOID FEVER.

Enteric Fever.

Description.—This is an acute infectious disease formerly called "Enteric Fever" because the bowels are so much involved.

Causes.—It is caused by the entrance into the body of a certain germ known to doctors as the bacillus typhosus. These germs gain entrance through the mouth, stomach and intestines. They are frequently taken into the system by drinking infected milk or milk that has been "watered" with impure water or cooled with infected ice. The freezing of the water in which the germs are found does not kill the germs. Water which comes from wells near cess pools or from shallow wells or wells that have not been cleaned for a long time or water which comes from rivers where the garbage

of a city is emptied is very likely to be contaminated and cause typhoid fever if a person is in the right condition to take it. Partially decayed vegetables, meats, oysters or clams are also likely to be swarming with the germs. Flies lighting upon the discharges from a typhoid fever patient, if the discharges have not been disinfected, very frequently carry the germs to pure food and thus spread the disease. Another source of typhoid fever is in decaying vegetables in cellars or cellars where the drains are stopped up and water is allowed to stand.

SYMPTOMS.—This disease affects males more than females and is most frequent in August, September and October. The germs may be found in every organ of the body. The small bowels and their glands are generally the organs most affected. The disease is generally from 1 to 3 weeks in coming on. It usually begins with a feeling or sense of general wretchedness and general illness with no particular symptoms being well marked unless it be the aching of the forehead and of the back and limbs. The expression of the face shows sickness very early in the disease. The patient becomes listless and later heavy and stupid and often a little deaf. Frequently there is considerable coughing without spitting up anything. The tongue is coated in the center but clean and red at the edges. There is headache, thirst, sleeplessness, and a mild fever develops and nose bleed may occur repeatedly. There is quite a bit of gurgling in the lower right part of the abdomen. There is usually constipation during the first week but on the other hand there may be looseness of the bowels instead.

Fever.—The temperature rises step by step; each morning it is higher than the morning before and each evening higher than the evening before. For example, the first morning it may be 99 and in the evening 100; the second morning it may be $99\frac{1}{2}$ and in the evening $101\frac{1}{5}$; the third morning it may be $100\frac{2}{5}$ and in the evening $102\frac{1}{2}$, etc. Usually by the end of the first week the fever reaches 102 or 103 in the mornings and 103 or 104 in the evenings and remains at this level until the 14th or 21st day. At this time the pulse is more rapid and varies from 90 to 100 and may go up to 110 or higher.

Rose Spots.—These develop about the 7th to the 9th day and appear on the skin of the abdomen and chest.

Later Symptoms.—The tongue becomes dry and cracked, the stupor or drowsiness is more marked, the bowels become looser and the bloating of the abdomen, or belly, is more noticeable. Usually, at the end of the second week the disease is at its height. If the patient has had little attention or if it is a severe case it will continue another week or longer. During the third week there is more diarrhea and bloating and a deeper drowsiness. There is shaking of the muscles and jerking of the tendons. The skin is dry and harsh and the patient is very thin. If the disease is not so severe these symptoms may decrease at any time between the 14th and 28th days. The fever and pulse then gradually go down and there are general symptoms of getting better. This is a typical case.

In some cases the diarrhea is very bad. In others there is greater bloating and soreness of the bowels. Sometimes the tongue and mouth look very bad. The blood poisoning is very severe in some cases as shown by the symptoms. Sometimes the tongue is very much swollen, coated and cracked and sticks to the mouth or turns down on the lips so that it is very difficult for the patient to put out his tongue and sometimes when it is out the patient

is too stupid to draw it in again. The delirium is either mild or active according to the case. The patient is said to be delirious or "out of his head." Bleeding from the bowels is a dangerous symptom. The bowels are very thin and ulcerated and may be easily torn or ruptured.

TREATMENT.—

Preventive.—Disinfect all discharges from the patient. The vessels which receive the discharges from the bowels and urine should contain a carbolic acid solution, 1 part of acid to 20 parts of water; or, a solution of corrosive sublimate, 1 part corrosive sublimate to 2,000 parts of water. A heaping teaspoonful of chloride of lime may also be used to a pint of water. Disinfect everything that has been in contact with the patient. The hands of the nurse should frequently be disinfected. See that all drinking water is boiled. To prevent taking the disease, read up on the causes and avoid them.

"What to Do."—Disinfect all discharges and everything that comes in contact with the patient. Always use a bed pan when the patient stools or passes water as getting up may rupture the bowels which are very thin at this time. Give the very best of nursing, be very careful of the diet, boil all drinking water and follow all instructions of the doctor very carefully.

"What Not to Do."—Do not let the patient take cold or some of the serious after effects like bronchitis or pneumonia may be the result. Do not allow the patient to get up for any purpose or the bowels may be ruptured. Do not give solid foods until two or three weeks after the patient has recovered. Do not allow your sympathies or the pleadings of the patient to persuade you to depart from this rule or death may be the result.

Avoid too much strong medicine. Stimulants may be given if the pulse is very weak and the first heart sound distant and feeble. Half an ounce of whiskey or brandy may be given in a little water or milk every 3 to 6 hours if needed.

Constipation.—Relieve this with injections of soap and water. In obstinate cases add to this from 1 to 2 teaspoonfuls of glycerine.

Diarrhea.—If this is excessive, that is, if there is more than 3 or 4 stools a day, give from 5 to 10 drop doses of aromatic sulphuric acid in simple elixir or in boiled water.

Bloating.—To the abdomen, or belly, apply cloths wrung out of water containing a little turpentine. If possible, apply these before much gas has accumulated and if the bloating continues give an injection of emulsion of asafetida either with or without a dram of turpentine added.

Bleeding from the Bowels.—Apply hot water bottles to keep up the heat of the body and give a pint of normal salt solution under the skin. This may be given once, twice or three times during the next 24 hours if needed.

Bed Sores.—Keep the parts clean and dry and bathe with alcohol.

Curds in Stools.—When curds appear in the stools, lessen the quantity of milk; or, it should be peptonized or its digestion aided by the use of pancreatin after it is taken.

Allopathic Treatment.—Unless the bowels have moved give $\frac{1}{4}$ grain doses of calomel every hour until 1 to 2 grains have been taken. If the bowels are not moved in 12 hours give a large injection of soap and water and a seidlitz powder if needed. Twelve hours later give from 5 to 10 drops of dilute hydrochloric acid with a teaspoonful of essence of pepsin and repeat this every six hours, after giving food, throughout the disease.

Nursing.—A typhoid fever case must be watched carefully from beginning to end. Bleeding from the bowels is an alarming symptom. It shows that the disease has eaten through the lining of the bowels to the small blood vessels. It is not necessarily fatal but it needs close attention. A fall of several degrees in the fever should arouse suspicion that the bowels are much ulcerated and are bleeding. This fall in the fever is often the first symptom. Either during or after an attack of typhoid the patient may have hemorrhage or bleeding from the bowels; or, he may have heart, stomach or liver troubles or bronchitis or pneumonia and symptoms of these should be carefully watched for.

A doctor, a friend of mine, was attending a case of typhoid fever. He warned the woman not to get out of bed for any purpose as it might cause bleeding from the bowels. His orders were disobeyed and the woman got up to use the vessel. A hemorrhage of the bowels was the result and the patient was dead before the doctor could arrive. No comment is needed.

If the fever rises to $102\frac{1}{2}$ degrees the patient is to be rubbed with either tepid, cool, cold, or ice water. Or even a piece of ice may be used. Give a brisk rub-off if the poisoning is very great, not so much to reduce the fever as to cause reaction and arouse the vitality of the patient. With this application of cold, in different degrees according to the needs of the case, rub the skin actively as the cold comes in contact with it because friction increases the loss of heat by one half and aids in causing reaction and a more equal circulation of the skin and also prevents the patient from being chilled. There are other ways of bathing. Some put the patient in a bath tub.

Nursing and Diet.—The diet is very important in this disease. It should be a milk diet for the first week and often for most of the second week. From a quart to a quart and a half a day may be given. Give a little every three or four hours and follow with the acid and pepsin before mentioned unless the stomach is irritable when a little lime water may be given instead, or a little celestin vichy may be used. When the milk is digested with difficulty, add to it some hot water or dilute it with carbonated water or water containing a little baking soda. If the taste is unpleasant to the patient it may be flavored with vanilla or nutmeg. Coffee, tea or cocoa in very small amounts may sometimes be given. After the first week or ten days, some patients may be allowed from one to two soft boiled eggs each day, so soft that they can better be taken as a drink than eaten with a spoon. A little salt should be added. Well boiled rice strained through a fine sieve, and even cornstarch or strained barley gruel, if well cooked, may be given at this time with advantage, particularly, if at the same time a little taka-diastase is used to aid their digestion. Broths and meat soups are not advisable as they often tend to increase the bloating.

A typhoid fever patient is going to be sick for several weeks and you need to keep up his strength by the use of food and bathing. Milk is generally the best food when given as directed above. Keep visitors out of the sick room, do not talk much and never whisper when near the patient. It is better to talk in a low tone than to whisper. Keep the teeth and mouth clean. You may need to clean them several times a day. Wrap a soft cloth around your finger, dip into water and gently clean the teeth and mouth. The patient's mouth and tongue are always dry and especially when the mouth is kept open and should then be frequently cleaned with a wet

cloth or a little water should often be given him. You can bathe him under the bedding and with cool water if he can stand it. Wring out the cloth or sponge so it will not drip water and bathe part of his body at a time and then dry. Keep the patient quiet and never let him get up to use the bed pan. If there is bleeding send for the doctor at once.

Follow the directions given as to food and when the patient is getting better never yield to his pleadings for more food. Follow the doctor's advice and give no solid food for some weeks after the fever is all gone. I never shall forget a minister who died of typhoid fever in my old home town. He was about well and one day while yet in bed he told the doctor that he wanted an old fashioned "boiled dinner." The doctor refused to give his consent to this, saying it would kill him. But the home people listened to the pleadings of the minister after the doctor had left and finally yielded to his persuasions. The minister got his "boiled dinner" and in a few days he was a dead minister. I was very young then and could not understand for many years why God should have taken that good man. The case was similar to the one I have previously related of the child that ate green apples and died of cholera infantum. It was not God but the "boiled dinner" that killed the minister.

I had carried a very bad case of typhoid fever in a young lady through five long weary weeks and the patient was recovering nicely so that I was then visiting her every second or third day only. One Sunday evening I was hastily called to her home and found that she was "flighty." She imagined that she saw flies and all sorts of creatures on the walls and ceiling. I asked for the cause of this but the family could not account for it and said they had disobeyed none of my instructions. I knew, however, that it is a custom of many farmers to have a great deal of company on Sundays and asked if this was not the case here. I found that my suspicions were true and that a number of persons had been admitted to the sick room, thus exciting and tiring the patient. This was what caused the relapse and flightiness of the patient. Thereafter they were more careful about admitting visitors to the sick room until the patient had more fully recovered. Too much care cannot be exercised in the treatment of this disease.

In typhoid fever, careful feeding is of the utmost importance. I once had a typhoid patient, a girl, who could take scarcely any food. In four weeks sickness she did not take and retain more than two quarts of liquid nourishment. I finally stopped trying to force her to take food and gave plenty of good water. She was very thin when the fever left her but she recovered nicely.

After Effects.—During or after typhoid the patient is likely to have hemorrhage or bleeding from the bowels; heart, stomach or liver trouble; bronchitis or pneumonia. To avoid these do not allow the patient to get up out of bed for any purpose, do not give too strong medicine and do not let the patient take cold.

TYPHUS FEVER.

Typhus fever is an acute infectious disease.

Cause.—Unsanitary conditions.

Symptoms.—The disease comes on quite suddenly. There is a chill, headache, backache, weakness and a high fever. The fever usually runs from 103 to 107 degrees. The pulse is full and rapid and not so feeble as in

typhoid fever. The face is deeply flushed and there is an eruption on the abdomen, or belly, in from 3 to 5 days. If the patient survives, the fever usually ends in from 12 to 14 days. It decreases rapidly at this time.

TREATMENT.—

The treatment should be similar to that of typhoid fever.

Preventive.—Fresh air and sunshine.

BLOOD POISONING.

Toxemia—Septicemia and Pyemia.

Description.—Septicemia means putrid material in the blood. Pyemia means pus in the blood. These are old names and toxemia is the better term.

Cause.—It generally is caused by poisoning from diseases such as abscesses, carbuncles, boils, appendicitis or mastoid disease or from an injury like a splinter in the finger or a nail in the foot.

Symptoms.—Chills are more or less severe. There is fever, sweats, stupor, prostration, a general “all in” feeling, unconsciousness and death. Some cases are slower and may be called sub-acute or chronic.

TREATMENT.—

Preventive.—Suppose you have stepped on a nail and run it into your foot, or opened a can and cut yourself. The hand or foot gets sore. Open the wound thoroughly with an instrument that has been placed in boiling water for at least five minutes so as to kill all germs. Wash the sore with gauze or clean linen and an antiseptic solution or if you have no antiseptics use hot boiled water. If a nail has been run into the foot put on a hot bread and milk poultice, change it often and keep it on till it bleeds freely. Then put on salt pork. If the nail went into the fore part of the foot look out for trouble on top of the foot in a few days. If it becomes sore it must be opened, cleansed and drained. Keep it open so that it can drain and do not try to heal it up outside too soon. By such care at the beginning many cases of blood poisoning can be prevented. If you have an abscess it should be opened thoroughly, drained and kept drained. Cleanliness of instrument, person, and coverings is essential. Externally it should be kept clean with hot water.

Treatment after Poisoning.—Remove the foreign body and give free drainage and do not try to close the sore. After the parts have been washed out thoroughly with an antiseptic and cleaned with clean tools, put on sterilized absorbent cotton. Use plenty of gauze over the cotton and then apply adhesive plaster to hold it on. Keep the wound open so that it can discharge. If it throbs it should be opened and dressed again. Be sure that the splinter, bee sting or other foreign body has been removed.

CHOLERA.

Asiatic Cholera.

Description.—This term is used to designate a disease characterized by watery purging, cramps, vomiting and extreme prostration.

Cause.—This disease is due to infection of the bowels by specific micro-organisms or germs called “*Spirillum Cholerae Asiatic*.”

Symptoms.—The symptoms come on in from a few hours to 10 days after infection. The first symptom is a watery diarrhea. The patient suffers from weakness and depression and if the passages from the bowels are very

great he suffers from great feebleness and even collapse with but little or no symptoms of the coming on of the disease. The patient is taken suddenly with active vomiting and purging, severe cramps and collapse. Some cases are more mild. If the case is severe it is always very serious.

TREATMENT.—Keep up the strength and treat according to the symptoms.

Homeopathic Treatment.—Third trituration of Arsenicum; second dilution of Veratrum Alb.; Camphor Tincture. (For preparation and doses see "Homeopathic Medicines" in Nursing Department.)

PEOPLE'S HOME REMEDIES.—

1. **Tincture of Camphor.**—At the first appearance of the symptoms put the patient to bed and keep him quiet. Every two to five minutes give one drop of tincture of camphor on a small piece of sugar and every 15 or 20 minutes give some brandy and water if the patient can retain it. When the patient is in a perspiration begin to give the medicine less frequently. Allow him to sweat eight or ten hours.

2. **Preventive.**—Tincture of camphor internally in one-drop doses twice a day is a preventive of this disease. Another preventive is to put half a teaspoonful of flowers of sulphur into each stocking. To stop the vomiting in the second stage give a teaspoonful of the following mixture every five to fifteen minutes—salt and black pepper, of each 1 dram; vinegar, 5 drams and hot water, 4 ounces. For the cramps rub the limbs vigorously with the hands or warm flannels. Rub tincture of capsicum (red pepper) along the spine and follow with a mustard poultice. During the third stage wrap the patient in wet hot blankets and give a mixture of one part of tincture of camphor and three parts of prickly ash berries. Give from a teaspoonful to a tablespoonful in water every ten to twenty minutes. Brandy may also be given.

3. **Cayenne Pepper and Camphor Gum.**—Into a teacup two-thirds full of hot water stir 20 grains of cayenne pepper and 10 grains of powdered camphor gum. The dose is a teaspoonful every hour or oftener if necessary.

BUBONIC PLAGUE. The Plague—Black Death.

Description.—This is a specific contagious disease occurring chiefly in unsanitary surroundings. It is attended with high fever and skin troubles such as carbuncles, boils or buboes. It occurs in epidemics or sweeps over a country and runs a rapid and severe course.

History.—The plague is an oriental or eastern disease and has long existed in certain portions of India. Most European countries have at some time been visited by epidemics of this dreadful malady. Probably the most famous epidemic of the Black Death was in Europe in the 14th century. More than 70,000 died in 1665 during another outbreak in London. Another severe epidemic visited Hong Kong and Canton, China in 1894. The disease was brought to these cities from Northern India. One hundred and eighty thousand people died in Canton. In September of 1896 the disease appeared in Bombay and the plague statistics for the Bombay district from Sept. 1896 to Jan. 13, 1899 are 169,240 deaths out of 214,197 cases. According to Koch there are three great central plague locations. One is in Mesopotamia, one in Assir and one in Thibet. There is also a plague district in German East

Africa. San Francisco has had some cases in recent years but by sanitary measures it was readily stamped out.

Cause.—The disease is caused by special organisms or germs called "*bacilli pestis bubonicæ*." Inside the body the germs have been found in the lungs, enlarged glands, pus from the buboes, the blood and other internal organs. Outside the body they are found in dust, excreta, food, soil, and in infected rats and flies. According to Koch the germs get into the body through the digestive tract by being taken in food, through the respiratory tract or by breathing, and by inoculation. The plague is spread by the two principal agents, men and rats. In almost all outbreaks affecting man, rats had the disease before and during the epidemic. The rat carries the disease from house to house and of course man carries it longer distances. Flies, fleas, ants and other insects also carry the disease and especially from rats to men. Mice, dogs, cats, horses and pigs also become infected and die of the disease. These, both before and after death, transmit the disease to healthy animals and to man. The disease is frequently carried by ships and by merchandise, clothing, etc.

Symptoms.—It is from 3 to 7 days coming on. There is pallor, headache and dizziness. The person walks as though intoxicated. The disease may come on abruptly with bilious vomiting, chills and recurring shiverings. The fever rises rapidly to 103 or 104 degrees or even to 106 degrees. The pulse becomes rapid and thread-like. There is stupor and the patient may be delirious. The patient may now become very weak and may die during the first period of the disease. More commonly the patient survives this threatened collapse and then from the second to the fifth day appear the buboes or inflammation of the lymph glands. These glands may enlarge gradually or rapidly and are usually quite painful. These enlarged glands may disappear or they may remain unchanged, particularly in fatal cases. Pus may form and sometimes, but rarely, gangrene may occur, forming the so-called carbuncle. The latter may also appear as gangrenous patches over the trunk and legs. In the worst cases there is bleeding from the lungs, stomach and intestines. There are two forms of the plague that affect man. One affects the lymphatic glands and the other affects the lungs. Plague-pneumonia is common in certain epidemics. The duration of the disease in fatal cases is from 3 to 5 days. On the other hand cases that tend to recovery may be prolonged, on account of the forming of pus in the buboes, to a few weeks or even months. The percentage of deaths is from 40 to 90 per cent. The formation of pus in the buboes or enlarged glands is a favorable symptom. A rapid disappearance of a group of enlarged glands or the appearance of carbuncles and bleeding are bad signs. Intense poisoning features and purple spots are signs of plague-pneumonia.

TREATMENT.—

Preventive.—Abandon all unsanitary habits. Isolate the sick. Avoid coming in contact with infected persons or entering infected dwellings. Disinfect the sick room, the bed, bed clothes, the vomit and stools. Steam the bed at 212 degrees for one hour and expose to the sunlight for a few hours. Burn all infected articles that you do not disinfect. After recovery the patient should not mingle with others for at least a month.

Treatment of Attacks.—Medicines seem to do no good but only combat the symptoms as they arise. For the delirium and pain, morphine or hyos-

cin is given. According to some authors the serum treatment gives good results both as a preventive and curative agent.

Nursing and Diet.—For the high fever give tepid or cold sponging. The diet should be liquid, concentrated and nourishing and stimulation is demanded from the start.

YELLOW FEVER.

Description.—This is an infectious disease occurring chiefly in warm climates and is attended with fever, a yellowish skin, in some cases a black vomit, and a tendency to oozing bleeding from the mucous membrane. A commission was appointed by the United States Government to investigate yellow fever cases and here is what they report.

Report of Commission.—

1. The mosquito (*stegomyia fasciata*) serves as intermediate host for the parasite of yellow fever.

2. Yellow fever is transmitted to the non-immune individual by the means of the bite of the mosquito that has previously fed on the blood of those sick with the disease.

3. An interval of about 12 days or more after contamination seems to be necessary before the mosquito is capable of conveying the infection.

4. The bite of the mosquito at an earlier period after contamination does not appear to confer any immunity against a subsequent attack.

5. Yellow fever can also be experimentally produced by the subcutaneous injection of blood taken from the general circulation during the first and second days of this disease.

6. An attack of yellow fever produced by the bite of the mosquito confers immunity against a subsequent attack of the non-experimental form of this disease.

7. The period of incubation in 13 cases of experimental yellow fever has varied from 41 hours to 5 days and 17 hours.

8. Yellow fever is not conveyed by fomites (infected goods) and hence disinfection of clothing, bedding or merchandise, supposedly contaminated by contact with those who are sick with this disease, is not necessary.

9. A house may be said to be infected with yellow fever only when there are present within its walls, contaminated mosquitoes capable of conveying the parasite of this disease.

10. The spread of yellow fever can be most effectually controlled by measures directed to the destruction of mosquitoes and the protection of the sick against the bites of these insects.

11. While the mode of propagation of yellow fever has now been definitely determined, the specific cause of this disease remains to be discovered.

Symptoms.—The disease comes on very suddenly with tiredness, headache, eyeache, dizziness, chills, paleness, stomach distress and severe back and muscular pains. The fever runs from 103 to 107 degrees. The breathing and pulse are at first increased. On the second or third day the pulse rate falls even while the fever is rising. The tongue is red and covered with a white fur. The bowels are constipated and the urine scanty and containing albumen. On the third day the symptoms become greatly modified, or lessened. This is the critical period. If the patient gets worse there is heart and stomach distress and persistent vomiting of a brown, reddish looking ma-

terial. The urine is more scanty and contains albumen. The grave symptoms increase.

TREATMENT.—

Plenty of fresh air and sunshine. Give medicine according to the symptoms.

MALARIAL FEVERS.

Description.—By malarial fever we mean or refer to a condition produced by the entrance into and development in the blood of certain germs known as "*plasmodium malariae*." There are four forms of this disease—intermittent, remittent, relapsing and pernicious.

Intermittent Fever—Fever and Ague or Chills and Fever.—There are chills, fever and sweating. These may occur daily, or alternate days or every third day.

Remittent Fever.—This is continued fever with remissions. Symptoms are a great deal like intermittent fever.

Relapsing Fever.—This is the sub-acute or chronic form.

Pernicious Fever.—This is a malignant form where the symptoms are very active.

TREATMENT.—

Quinine is usually the treatment. Must also treat the symptoms as they arise. If the fever and chills occur daily the quinine is to be given each day. If it does not occur every day then give the quinine on the days it is expected. For the milder forms give from 10 to 15 grains. For the more severe cases from 30 to 60 grains may be given in powder. If it is the pernicious form give in soft capsules as quickly as possible.

Herb Remedies for Ague and Intermittent and Remittent Fever.—Where quinine cannot be given use dogwood bark. Put the dried bark into water and boil it down to the proper consistency. The dose of this is from 20 to 60 grains. The dose of the extract is from 1 to 5 grains. Another remedy is to give hot boneset tea to produce vomiting. During the intermission give the tea cold. It is to be given every hour as a tonic and anti-periodic. A decoction made by boiling ironwood in water is still another remedy. The dose is from 1 to 2 ounces 3 or 4 times a day.

For Ague, Malarial Fever, Etc.—I give 2 grains of quinine every 1 to 2 hours in acute cases, until the patient hears his ears "singing." Then I give him just enough to keep him in this condition, say a dose every 2 to 5 hours. Give to children in proportion to their age. In chronic cases quinine is not so good. The bowels and kidneys must be kept working well by laxatives and diuretics if necessary. Give tonics in the interval if the patient is run down. For chronic cases Fowler's solution of arsenic, 5 drops four times a day, is good.

Homeopathic Treatment.—Arsenicum Alb., third trituration, every three hours is good. Natrum Mur. is good in some cases. (For preparation and dose see "Homeopathic Medicines" in Nursing Department.)

PEOPLE'S HOME REMEDIES.—

1. **Salt**—The Great South American Remedy.—Roast some salt in the oven until it is the color of roasted coffee. Dissolve a soup-spoonful in a glass of water and take at one dose. Be careful of the diet.

Physician's Remark.—South Americans claim that burnt salt is an excellent remedy for this disease.

2. **Remittent Fever.**—During the fever the mother should wrap the child in wet cloths until it sweats, then wash in warm water. Put cloths wrung out of cold water to the head if it is hot and change frequently. This is for remittent fever.

3. **Onions, Garlics, Mustard, Vinegar.**—Give a cathartic and place either onion, garlic or mustard poultices to the feet and apply equal parts of vinegar and water to the head.

Physician's Remark.—If garlic poultices are used it is hardly necessary to add that it might be a good plan for the nurse to hold her breath while attending to the patient.

4. **Herb Teas.**—Mothers will find the following remedy valuable for remittent fever of children. When the fever is on, let the patient drink freely of warm balm, catnip or elder flower tea. When the fever is off, take a quart of boiling water and add a tablespoonful of each of the following in powder form: dogwood bark, black cohosh root, chamomile flowers and Solomon's seal root. Steep for four hours in a covered vessel and, when cold, strain and sweeten. Give a teaspoonful every hour.

5. **Catnip, Boneset, Pennyroyal, Red Pepper and Lemonade.**—During the chills of ague let the patient drink either catnip, boneset, pennyroyal or red pepper tea and during the fever allow cold lemonade.

Physician's Remark.—The first three of these teas cause sweating, red pepper stimulates the stomach and lemonade quenches the thirst and supplies citric acid.

6. **Ginger and Hot Milk.**—Add a large tablespoonful of ground ginger to a pint of milk, heat and drink when the chills come on. Repeat before each chill if necessary.

Physician's Remark.—Ginger is stimulating and warming.

7. **Lemon Juice.**—Drink the juice of three lemons every other day if you have chills and fever.

Physician's Remarks.—Each lemon yields from 2 to 8 drams of juice containing from 7 to 9 per cent. of citric acid besides phosphoric and malic acids in combination with potassa and other bases. The juice is good as a sweater for colds and has many other uses both internal and external.

8. **Coffee and Citric Acid.**—Just before a chill comes on drink a cup of hot coffee in which has been dissolved fifteen grains of citric acid. A woman in Mississippi where this disease is common tells of several instances where this treatment has cured some very bad cases.

9. **Cotton Seed Tea.**—A southern lady gives the following: "To two pints of water add 1 pint of cotton seed and boil to a pint. Strain and take while warm about an hour before the chill is expected."

10. **Dandelion and Quinine.**—Put two ounces of elixir of dandelion into an 8 ounce bottle. Add 40 grains of quinine and fill the bottle with simple syrup. Shake well and take a tablespoonful three or four times a day. For children, give in proportion to their ages. This is claimed to be a sure remedy.

Physician's Remark.—Dandelion acts upon the bowels and thus causes them to do better work during ague.

11. **Mandrake Root, Molasses and Boxwood Tea.**—Squeeze out 1½ tablespoonfuls of juice from freshly dug mandrake root and mix with the same quantity of molasses. This will make three doses of a tablespoonful each. Take two hours apart. Then drink boxwood tea which is made from the bark. Drink this freely for a couple of weeks.

12. **Quinine and Red Pepper.**—Mix 10 grains of quinine and 4 grains of red pepper, divide into 3 doses and take four hours, two hours and one hour before the chill is expected.

Physician's Remark.—I think that larger doses of the quinine could be used to better advantage.

13. **Soot Tea.**—Take a tablespoonful of wood soot scraped from the chimney and steep in a pint of water. Settle with an egg and add sugar and cream and drink with each meal the same as coffee.

14. **Wormwood Tea.**—This is very good for the chills.

15. **Lemon and Salt.**—Eat one raw lemon with a little salt three times a day and take some good laxative.

Physician's Remark.—This keeps the stomach, liver and bowels in good condition.

ANTHRAX.

Description.—This is an infectious disease common in Europe and South America.

Cause.—It is due to the presence of germs called the bacillus anthracis. It comes largely from handling infected animals or their raw hides.

TREATMENT.—

The treatment is preventive. Forbid handling the raw hides and infected animals if they have any superficial wounds.

LOCK JAW.

Tetanus.

Cause.—This is produced by germs or the bacillus of tetanus. It can be caused by poisoning from a very small and insignificant wound such as a pin prick, a rusty nail or a cut from a tin can. Fourth of July produces many cases because of the injuries happening on this day.

Symptoms.—The muscles become rigid and set so that the limbs are fixed and the jaw locked.

Treatment.—Tetanus antitoxin is the remedy, but it must be used early. Should be given immediately after the wound if possible. Give chloral hydrate and the bromides in full doses for the spasms. Give nourishing and easily digested foods and feed through a tube inserted in the nostrils if necessary. All wounds should be cleaned and dressed as directed under "Blood Poisoning."

PEOPLE'S HOME REMEDIES.—

1. **Wood Ashes, Vinegar, Cayenne Pepper, Etc.**—Put hot wood ashes into hot water, wet thick cloths in the water and apply to the jaws as quickly as possible and at the same time bathe the entire backbone with hot vinegar with either cayenne pepper or mustard added. If vinegar is not at hand use hot water in its place. Persist in this treatment and the jaws will relax.

2. **Turpentine.**—Some spirits of turpentine poured upon almost any kind of a wound will often give relief.

3. **Tobacco.**—Moisten some tobacco thoroughly and lay upon the patient's stomach. This will cause sickness and relaxing of the muscles as there are many nerves in this region. Do not leave it on longer than is necessary to produce the desired effect or it may cause deathly sickness.

4. **Nicotine.**—Give nicotine in one-drop doses in a little wine often

enough to control the convulsions. In some cases two drops will be required. This remedy comes from Scotland and is claimed to be very effective. Nicotine is a poison contained in tobacco.

Physician's Remark.—This drug should be used very carefully.

GONORRHŒA.

(See Men's Department.)

DENGUE.

Breakbone Fever—Three-Day Fever.

This is also called "Dandy Fever," "Bouquet Fever" and "Bucket Fever." It is an acute infectious disease and is usually epidemic. There is severe pain in the muscles and joints and the patient has a peculiar walk.

MALTA FEVER.

This is commonly found on the Island of Malta.

MASHA FEVER.

This is a disease found in certain sections of India.

BERIBERI.

This is epidemic multiple-neuritis found in tropical and sub-tropical countries.

FUNGUS FOOT.

Mycetoma.

This is the maderia foot or fungus foot of India. It is characterized by an enlargement of the feet or hands. So far as is known it is limited to the natives of India and Europeans who go there do not seem to take it.

LUMP JAW.

Actinomycosis—Wooden Tongue.

This is a chronic infectious disorder produced by germs. It is sometimes called the ray fungus. It is far more common in cattle. When the tongue is affected it is called wooden tongue.

TICK FEVER.

This is usually seen in western Montana.

Cause.—It is caused by the bite of the "tick."

Treatment.—Give fifteen grains of quinine hypodermically every six hours. Stimulate the heart. Drink large quantities of water.

GLANDERS.

Farcy.

This disease is generally met with in the horse but it is sometimes taken by man. Nodules or masses appear in the nostrils of the horse. When they appear on the skin the disease is called farcy.

Cause.—It is caught by taking care of a horse with glanders.

Symptoms.—The disease develops about four days after infection. The patient feels wretched, has fever and there is circumscribed swelling at the place of infection. This is followed in a few days by ulceration of the mem-

brane lining the nose passages and there is a discharge of muco-pus. There is cough and difficult swallowing. The disease is very dangerous.

Treatment.—Open the swellings and give free drainage. Give a nourishing diet and stimulants.

LEPROSY.

“A chronic infectious disease caused by bacilli lepræ, characterized by the presence of tubercular nodules (lumps) in the skin and mucous membranes (tubercular leprosy), or by changes in the nerves (anæsthetic leprosy). At first these forms may be separate but ultimately both are combined and in the characteristic tubercular form there are disturbances of sensation.” (Dr. Osler.)

History.—It seems that the disease prevailed in Egypt even as early as three or four thousand years before Christ, and both in China and India the disease was known many centuries before the Christian era. All the cases that now exist in Great Britain are imported. In Europe the disease is prevalent in Sweden and Norway, parts of Russia and particularly the districts about Dorpat, Riga and the Caucasus, and in some parts of Spain and Portugal. In the United States there are three important regions where the disease is found. In Louisiana the disease has existed since 1785 and has increased of late. It is estimated that there are between 300 and 500 cases in Louisiana. The disease has been brought into California by the Chinese and cases are not infrequent. It is known that about 170 lepers settled in Minnesota with the Norwegian colonists but the disease has steadily decreased. The disease is also found in Canada and Mexico and is more common in the West Indies.

Modes of Infection.—(a) Inoculation—A person may be infected by accidental inoculation. (b) Heredity—It may be transmitted from parent to child, but this is doubtful. In this respect it is similar to tuberculosis. The youngest cases are rarely under three or four years.

It may be spread through infected clothing, merchandise, etc., but the closest and most intimate contact is necessary. Doctors, nurses and sisters of charity seldom take the disease.

The tubercles of leprosy consist of tissue which is made up of various sized cells in a connective tissue matrix. The germs lie in great numbers partly between and partly in the cells. The skin is gradually affected and tuberculous outgrowths appear with intervening spaces of ulceration which in the face may gradually produce the so-called facies leotina or lion face. The mucous membrane may also be affected and particularly about the eyes and the back part of the throat. Deep ulcers form in many cases and the result is often the loss of toes, fingers and other parts of the body. In anæsthetic leprosy the development of the germs in the fibers of the nerves produces peripheral neuritis. This involvement of the nerves is the cause of many of the important features, and particularly the changes and destruction of the tissues of the skin and the disturbances of sensation.

Treatment.—There are no specific remedies for this disease. Segregation, or the placing of the patients by themselves, should be compulsory in all cases unless the friends have ample provision in their homes for their isolation and care.

HYDROPHOBIA.

In the preparation of this article we have consulted some of the best authorities in the country on the subject of the treatment of hydrophobia by the Pasteur method. Institutes for the treatment of this disease by this method are located at Ann Arbor, Michigan; Chicago, Illinois; Austin, Texas; Baltimore, Maryland; Minneapolis, Minnesota; and New York City. Doubtless they will be established in many other cities before many years.

Hydrophobia is an infectious disease transmitted to man by the bite of a dog or some other animal suffering from "madness" or rabies. The disease is communicated by the bite of the mad animal and by means of the saliva. This poison is naturally located in the nervous system and does not seem to keep its poisonous power when introduced into any other system of organs. So hydrophobia is a nervous disease. In order to have a poisonous effect this poison must touch a broken nerve trunk. When the poison comes in contact with the end of a broken nerve trunk it slowly spreads to the higher nerve centers and in time causes hydrophobia.

The term "rabies" applies more particularly to animals suffering with this disease than to man. The term means "to become mad" or "to rage." "Hydrophobia" comes from a Greek word which means "water-fear." In man, when suffering from this disease, we sometimes find a dread of water and that is why we apply the one term to man and the other to animals. The dog and other lower animals will try again and again to drink even though the attempt brings on a spasm of the muscles used in swallowing. It seems that the animal is more excitable and at the same time its sensitiveness to outside impressions is deadened and so the animal will try to drink even when it causes great pain.

After a person has been bitten it is generally from three to six months before the disease develops. The disease is seldom over six months in developing but one case is reported where it developed thirteen days after the person was bitten.

During the first stage of the disease or the stage of excitement the patient has an expression of great anxiety. One of the marked features of the disease is that quite early the patient dreads the sight of water. The patient is very nervous or excitable and is very sensitive to feeling or pain and an unexpected noise or a draft of air may cause great nervous disturbance and a violent contraction of the muscles of the upper part of the windpipe. These contractions, or spasms, may be so violent as to make it very hard for the patient to breathe and may cause him to make curious sounds. He may also make snapping noises with the mouth. This is caused by the contractions or spasms of the muscles of the mouth. The patient may froth at the mouth and he frequently rolls his head from one side to the other and is very restless and nervous. The attacks come on by spells or occur in paroxysms and between these attacks the patient is free from excitement. The pulse is somewhat faster than normal and generally the fever is between 100 and 102 degrees though sometimes there is no fever at all. Spasms of the breathing apparatus develop spontaneously toward the latter part of the first stage of the disease. Oftentimes the patient is so attacked with melancholia that he commits suicide.

The disease lasts from one to three days. The paralytic stage follows the stage of excitement and lasts from twelve to eighteen hours. The pa-

tient is conscious of his intense pain until death releases him from his great suffering.

The three marked features or symptoms that usually characterize this disease are fear, excitement and spasms of the swallowing muscles. These terminate in general paralysis.

Mad dogs cause about nine out of every ten cases of hydrophobia in men and animals. The cat causes about six per cent. of the cases and the remaining cases are caused by mad horses, wolves, foxes and other animals. Many animals are subject to the disease when bitten by an animal suffering from it.

In making demonstrations in the laboratory the rabbit and the guinea pig are used. In diagnosing, the guinea pig is generally used for the disease develops in it quicker than in other animals. Because of their convenient size and because they are easily operated on rabbits are generally used to produce the material for treating hydrophobia patients.

Patients are treated by injecting them with a serum prepared for the purpose. The brain of a mad dog is taken and from this an emulsion is made. Some of this emulsion or poison is then injected into the brain of a live rabbit and after the rabbit dies of hydrophobia its spinal cord is taken out and put into a fluid in a glass case. Fourteen of these cords are kept for use and each of the rabbits from which they were taken died at a different time so that the cords are of different ages. A serum is made from each of the cords with which to inject the patient who has been bitten. This treatment must be given, however, before the disease has developed in the patient. The fourteenth spinal cord is the oldest and hence the weakest, or the least poisonous, and the serum made from this one is the one first injected into the patient, then later the serum from the thirteenth cord is injected into the patient and next from the twelfth and so on until he has been injected with a serum made from each of the cords. The strength of the serum used is thus increased at each injection until he has taken enough and of the proper strength to make him immune to the disease. It takes an expert to give the proper quantity and strength and make the treatment effective. The serum is not injected directly from a mad dog for that would be too strong but it is weakened by passing through the rabbit.

To tell whether a dog which has bitten a person was really mad or not an emulsion can be made from the brain of the dog and injected into a rabbit or guinea pig and if the animal develops hydrophobia you are then sure the dog had it. This method takes too long, however, for if the dog was mad the patient ought to begin treatment at once. A quicker way of determining whether the animal had rabies is to examine the brain. If it had the disease peculiar little bodies will be found in the brain. This is why it is necessary to send the head of the dog to the institute if you have been bitten and are suspicious that it was mad.

A person may get hydrophobia not only by being bitten by a dog with rabies but he may get it by having the animal lick a wound on the hand or face. He is just as likely to take it this way as by being bitten for it is the saliva that transmits the disease. Of course most cases are caused by being bitten. The lacerated or torn wounds on the hands and face are considered the most dangerous. The two things that render the wound most dangerous are its locality or closeness to the brain and the large amount of infection transmitted. These two conditions make immediate treatment necessary and

yet an insignificant wound should also have prompt and thorough treatment for death may be caused by a very small wound. If the wound is but a small one the disease probably will not develop so quickly but it can be just as fatal as a larger wound and this should be considered in deciding whether to begin the Pasteur treatment or not.

It is very commonly believed that a dog goes mad because of the lack of water, because of being confined or because of hot weather and yet these conditions alone cannot cause rabies. As far as is known a dog or any other animal never took the disease spontaneously but it was always the result of infection from some other animal. Up to a few years ago it was believed that rabies was a hot weather disease but the great number of cases occurring during the winter months has proven this belief to be unfounded.

It is believed by many that the disease is sure to follow if bitten by a mad animal but the truth is that only about forty per cent. of the animals bitten by rabid animals take the disease. And when we speak of man alone, the statistics show that only about twenty per cent. of the persons bitten by rabid animals develop the disease. And yet when one is considering preventive treatment it is wise to consider each case dangerous and to take treatment the same as though you were sure the disease would develop if you did not. The danger is too great to take any chances.

Bites on the exposed parts of the body like the head, neck and hands are most likely to result in hydrophobia because there is no clothing to partially protect these parts. Bites on the face and head are especially dangerous because they are so close to the brain. It is claimed that bites on the head give a mortality of eighty per cent. and they cause death more quickly than bites on other parts of the body.

Pasteur did the original work in treating hydrophobia by this method and the work now done by the Pasteur Institutes is the practical application of his methods. Pasteur was an eminent French chemist and began his search for the cause and cure of this disease in 1880 and in 1886 he considered that the inoculation of people as a preventive of this disease was a justifiable experiment. During the years between 1880 and 1886 he proved by experiments that the lower animals could be protected in this way from the disease. As a result of these experiments on animals he concluded that he was justified in trying the treatment on people and on July 6th, 1886 the first human patient took the first of these treatments. Between 1878 and 1883, seventeen per cent. of the cases of hydrophobia proved fatal. This was before the time of the Pasteur treatment. The records of the Pasteur Institute in Paris for the years 1886, 1887 and the first half of 1888 show that during this time 5374 persons took this treatment under the supervision of Pasteur. Each of these persons had been bitten by an animal either proven or suspected of being mad. The death rate for all in 1886 was one and thirty-four one-hundredths per cent., for 1887 it was one and twelve one-hundredths per cent. and in 1888 it was seventy-seven one-hundredths of one per cent. With later changes that have been made in the methods of treatment the death rate of all treated has been reduced to three-tenths of one per cent.

The Pasteur treatment must be taken before the development of the disease. After the first symptoms of the disease appear the treatment is of no value. If the disease developed at once after being bitten it would be impossible to carry out the Pasteur treatment. But, as has been previously said, the disease is generally from three to six months in developing and the

patient takes advantage of this time to be treated. This disease develops only in the nerve tissue and is carried along the nerve trunks to the brain.

If a dog which is not naturally vicious suddenly bites, and without apparent cause, it should be tied up securely and watched for several days to see if the disease develops in the dog. Sometimes the only symptom noticed at first is a tendency to bite without sufficient cause but if watched for several days the stage of excitement and then of paralysis will come on. If the dog shows symptoms of madness during these days of confinement the wound should be considered dangerous.

Cauterizing or burning the wound is a wise preventive measure for the time. This is generally recognized as the first and most important preventive treatment. There seems to be some misunderstanding, however, as to the proper method of doing this and as to how long a time may elapse after the bite before the burning will be of no value. This misunderstanding seems to extend even to the physicians.

This cauterizing should not be neglected because several hours have passed since the bite. Of course the sooner it is done the better but it will sometimes be of value even after two or three days have passed since the infliction of the wound. If it has been some time since the bite the parts should be thoroughly laid open and scrubbed as well as cauterized. The poison is in the broken nerve trunks and does not travel very rapidly, hence the value of cauterizing even at a late date.

The liberal use of fuming nitric acid is much the best method of cauterizing. Nitric acid is very penetrating but even with the use of this acid ten per cent. of the animals experimented on die. Ninety-five per cent. carbolic acid should be used if there is no nitric acid at hand but the nitric acid is better. Whichever is used, the parts should afterwards be washed well with sterile or boiled water. And if the carbolic acid has been used the part should first be washed with absolute alcohol, then with sterile water and then a one to seven thousand bichloride dressing should be applied. If the carbolic acid is thoroughly washed out there will not be the danger of ulceration which frequently occurs after the use of this acid.

With the application of either of these methods an occasional life may be saved and this is especially true where the wounds are large and a large quantity of poison has been transmitted. If a part of the virus is destroyed by burning, the Pasteur treatment will be made more certain for the Pasteur treatment alone might not be enough to save some cases where much poison has been inoculated.

If there are good grounds for believing that the animal was mad the patient should be sent to a Pasteur institute at once. It is of great importance that the treatment begin as soon after inoculation as possible. It is not best to wait until the animal dies or until experiments have been made upon animals. Of course, if there is a great deal of doubt as to whether the animal was mad one might sometimes be justified in waiting until the result of the test has been made known.

The entire head of the animal supposed to be mad should be sent at once by express to the laboratory of the Pasteur Institute in one of the previously mentioned cities. Or, it is best to have a health officer take it personally. The brain will then be examined and if the test shows that the animal was mad the patient can begin treatment at once.

In one of the Ann Arbor cases the brain was examined and the dog

pronounced mad within twenty minutes after the head was received and within the next hour and a half the patient had begun her course of preventive treatment.

SUMMARY, OR WHAT TO DO IF YOU ARE BITTEN BY A MAD DOG.

From this article, then, we would gather that if a person is bitten by a dog which he has reason to believe is mad, he should at once open the wound and cauterize, or burn, it with nitric acid; or, if this is not at hand he should use carbolic acid. (Use a red hot iron if no acid can be obtained.) This should be done immediately but will be of some good even after three days. The patient should then immediately go to one of these institutes in one of the cities mentioned at the beginning of the article; or, at least he should send the head of the dog by express or by person to the same place and then if the test shows that the animal had hydrophobia he himself should go to the institute without delay.

If a person is bitten by a dog and it is very doubtful about its being mad, the dog should at once be fastened up and watched for at least seven days unless symptoms of hydrophobia develop earlier. If the dog shows symptoms within this time the person bitten should lose no time in going to one of these Pasteur Institutes for treatment. Do not forget to save the head of the dog so that it may be examined and thus make certain whether or not it was mad.

The first symptom of this disease is a difficulty in swallowing.

Remember that if you are bitten by a mad dog it is too late to do anything after the first symptoms appear. The treatment is purely preventive so it is best to lose no time.

DISEASES OF THE LUNGS, BRONCHIAL TUBES AND AIR PASSAGES.

(Diseases of Respiration.)

Description of Organs.—In order to locate correctly the organs of respiration, or the organs used in breathing, it will be necessary and convenient to also locate two or three organs that do not belong to this system, like the gullet and tonsils, for instance.

In front, the roof of the mouth is called the hard palate and behind it is called the soft palate. The hard palate is continuous with the soft palate. The soft palate is a movable fold of flesh hanging or suspended from the back border of the hard palate. Hanging from the middle of the lower border of the soft palate above the root of the tongue is a soft, fleshy mass called the pendulum of the palate or the uvula. This is plainly seen upon looking into the mouth. Arching downward and outward from the base of the uvula on each side are two curved folds of mucous membrane called the "arches" or "pillars" of the soft palate or pillars of the fauces. The space left between these arches or pillars is called the isthmus of the fauces. The "fauces" is the opening which is between the mouth in front and the pharynx behind. The arches or pillars are on both sides of the fauces and the uvula or pendulum hangs down into it. As before stated there are two arches or pillars on each side and between the two are the tonsils, one on each side of the fauces. The surface of the tonsils toward the pharynx has from twelve to fifteen openings each leading into a small opening or crypt. From these crypts or openings there are numerous follicles branching out into the substance of the tonsils by very irregular channels. The pharynx is the opening or box which lies behind the fauces. It is a part of the alimentary canal and from it are passages leading to the mouth, nose, ears and œsophagus or gullet. The larynx also opens into the pharynx.

The œsophagus or gullet extends from the pharynx to the stomach and enters or connects with the stomach at a point opposite the tenth dorsal vertebra. It is from nine to ten inches long. It is a part of the alimentary canal and of course belongs to the digestive apparatus instead of the breathing apparatus. It is the tube down which the food goes from the throat to the stomach.

The larynx is the voice box where sounds are made. It is four and a half inches long and is situated between the base of the tongue and the trachea or windpipe. It forms a projection in front called the "Adam's apple" and this moves distinctly when we swallow. The larynx is really an enlargement at the upper end of the windpipe. Across it are stretched the vocal cords which produce the voice.

The trachea, or windpipe, extends from the lower part of the larynx, on a level with the sixth cervical vertebra, to opposite the fourth or fifth dorsal vertebra. Here it divides into two bronchi, or tubes, called bronchial tubes.

One goes to each lung. The right one is larger but shorter than the left one and is about an inch in length. It enters the right lung opposite the fifth dorsal vertebra. The left tube is smaller but longer than the right one, being nearly two inches long. It enters the root of the left lung about an inch lower than the right tube enters the right lung or opposite the sixth dorsal vertebra.

The pleura covers each lung upon its outer surface as far as its root and is then reflected upon the inner surface of the chest. Between these two layers is the cavity of the pleura and it contains a very little clear fluid. Each pleura is a separate and a closed sac. In a healthy condition the two layers of each pleura are in contact. Pleurisy is a disease or inflammation of the pleura.

The lungs are the organs of respiration and are two in number. They are placed one on each side of the chest. The right lung has three lobes and the left but two. The bronchial tubes divide and sub-divide into many small air passages in the lungs and these finally end in the air cells. The tissue between these cells contains many small blood vessels where the blood circulates and is purified by giving off its poisons to the air and taking in oxygen from the air.

WHOOPIING COUGH.

Pertussis.

Description.—This is an acute, specific, infectious disease. It is also contagious. It occurs most frequently between the first and second years and next most frequently between the sixth and twelfth months. It is particularly a disease of childhood but may attack persons of any age. A person very seldom has the disease more than once. The death rate is greatest during the first year, being about twenty per cent. Between the first and fifth years the death rate is about five per cent. The occurrence of pneumonia in children under two years of age adds to the death rate.

SYMPTOMS—First or Beginning Stages.—It begins with what seems to be a cold with a cough which is worse at night. This cough becomes more and more troublesome no matter what treatment is used. After four or five days there may be vomiting and especially after eating. As time goes on the coughing lasts longer each time and the patient becomes red in the face and spits up a large amount of mucus. This period without whooping may last ten or twelve days. Some cases have but very little of the whooping. There is some fever during the first few days.

Second or Spasmodic Stage.—The whoop now appears and this is a distinguishing feature of the disease. The cough is very spasmodic and occurs in paroxysms beginning with the drawing in of the breath and is marked by a loud crowing sound called the whoop. The number of these spells of coughing generally increases and the patient may have from 20 to 100 in 24 hours. This second stage of the disease may last two or three weeks.

Third Stage or Stage of Decline.—The number of fits of coughing decreases and the cough is less severe. The spells of coughing may stop gradually or suddenly after from four to twelve weeks. The whoop may reappear at times afterwards. After the whoop has disappeared the cough may continue for some time, especially if the disease occurs during the fall months. In young persons the lungs may become affected so that the child

gets pneumonia or bronchitis. Whooping cough generally lasts for two months, more or less.

TREATMENT.—

“What To Do.”—Give good nursing, keep the bowels open and be on the watch for symptoms of pneumonia or bronchitis. Immediately attend to any fever that appears or continues going higher.

“What Not to Do.”—Do not over feed. Do not let the bowels become constipated. Do not let the child take cold or serious consequences may follow.

Medical Treatment.—As a general thing the medical treatment is unsatisfactory unless dangerous medicines are used. Antipyrin is used in large doses and so is quinine but the doses are so large that I consider them injurious. Belladonna is also used in doses large enough to produce a rash on the skin. I cannot advise this in such doses. I consider Vapo-Cresoline one of the best remedies and the directions for its use will be given under “Nursing.” Teas made from clover blossoms and from green chestnut leaves are also very good.

Homeopathic Treatment.—The third dilution of Belladonna, the third trituration of Cuprum and also Drosera are much used by Homeopaths. For this disease I cannot say that I have found the homeopathic medicines as beneficial as in many other diseases.

Nursing and Diet.—The patient should be dressed warmly and comfortably. Children should be fed frequently and in small amounts and the food should be liquid. When the disease is attended with much fever it should receive prompt attention as this indicates bronchitis or pneumonia. Medicine will help the complications or accompanying diseases more than it will the whooping cough. In summer it is best for the children to be out of doors. In winter they should be kept in a warm and well ventilated room with the temperature at about 70 degrees. The air should be moistened by liberating in the room small quantities of steam from a kettle of boiling water or from a croup kettle or by dropping pieces of unslacked lime into a bucket of water. When it is not possible to keep the child in an evenly heated room, a most excellent method, particularly in those cases where the attacks are frequent at night, is to place the child in a bronchitis or croup tent as described in the Nursing Department.

Vapo-Cresoline.—This is the best remedy I have ever used. It can be bought at any drug store and the directions are on a circular which comes wrapped around the bottle. Vapo-Cresoline is to be burned in the closed sleeping room at night when the patient goes to bed. This allows the patient to sleep well and it is not dangerous. I have used it many times during the last 15 years and it has never failed me. If you wish, you can buy the lamp that goes with it or you can use a common lamp and make a wire holder for the granite cup and place it on top of the chimney high enough so that the lamp does not smoke. Put the vapo-cresoline in the cup to the depth of about one-fourth an inch. If more is needed it can be added later. Light the lamp in the closed sleeping room about 10 minutes before the patient goes to bed. Leave no windows open or the vapor will all escape. Remove all clothes from the room or they will retain the odor for a long time. This treatment is good for either children or grown people who are suffering with whooping cough.

After Effects.—Bronchitis and pneumonia often come during or after whooping cough and the patient should be very careful not to take cold or

one of these diseases may be the result. If not properly cared for, the patient may be left in a weakened condition and thus be more subject to consumption. Indigestion and diarrhea are other after effects and attention should be paid to the diet. Sometimes there are convulsions and paralysis. **PEOPLE'S HOME REMEDIES.**—

1. **Chestnut Leaf Tea.**—This is probably the best remedy known for whooping cough. To a pint of boiling water add a handful of the green leaves, steep, sweeten, and when cool let the child drink of the tea five or six times a day.

2. **Clover Blossom Tea.**—Gather red clover blossoms, make a tea of them and drink it freely. This is both a preventive and a cure.

Physician's Remark.—Dr. Hartshorn in his book advocates the use of clover tea and especially a tea made from green chestnut leaves. These are claimed to be very good and a good feature of them is that they cannot injure the child as is sometimes done with strong drugs.

3. **Licorice, Butter, Sulphur, Etc.**—Mix equal parts of licorice, sulphur, fresh butter and spermaceti. This may be taken freely.

4. **Pine Boughs, Wintergreen and Sweet Oil.**—Boil some pine boughs, wintergreen and sweet oil and use the solution.

5. **Ammonia.**—One of the best remedies is to boil some strong ammonia in the room and let the child inhale the fumes.

6. **Turpentine.**—A physician of Vienna recommends the placing of twenty drops of oil of turpentine on a handkerchief and holding it before the child's face while it takes 30 or 40 deep breaths.

7. **Peach Leaves.**—Make a tea of peach leaves by adding an ounce of the leaves to a pint of cold water and allowing to stand until the water has taken part of their strength. Give a tablespoonful every hour or two.

8. **Skunk Cabbage.**—The tincture made of the fresh root of skunk cabbage is good for whooping cough. The dose is from 1 to 2 drams.

9. **Maiden Hair Tea.**—A tea made of maiden hair will be found an excellent remedy for whooping cough.

COLDS, COUGHS AND HOARSENESS.

(Acute Coryza.)

The symptoms are too well known to need description.

TREATMENT.—

Preventive.—Keep the children well clothed and out of doors as much as possible. Have ventilation in the sleeping rooms so that plenty of fresh air can enter. The temperature of the house should be from 68 to 70 degrees. Begin out door treatment in the summer and sleep with plenty of fresh air during the whole year. Use cold sponging upon rising in the morning and especially upon the chest, throat and spine. Wear flannel underclothing on the chest all year and on the limbs in winter. This applies particularly to children. The underwear should be medium weight in winter and lighter in summer. Give cod liver oil to weak children to build them up so they will not take cold easily. Do not use chest protectors, cotton pads or extremely thick clothing on children. If a child is subject to frequent colds, see if there are adenoids in the pharynx, or throat. To avoid taking cold always change wet clothing immediately. Do not get to sweating and then sit down to cool off and do not stay in a poorly ventilated room and breathe the same air over and over.

"What to Do."—Grease the nose, throat, face and chest with sweet oil, lard, camphor or camphorated oil twice daily. Keep the bowels open and if necessary sweat the patient.

"What Not to Do."—Do not wear chest protectors or cotton pads. Do not do anything that will make you take more cold as serious diseases sometimes follow when the system is run down from a bad cold.

Allopathic Treatment.—For an adult, at the beginning if there is fever, give from $\frac{1}{2}$ to 1 drop of aconite every two to four hours. Stop when the throat feels dry and contracted. At night give hot lemonade and 10 grains of Dover's powder. You can also give $\frac{1}{100}$ of a grain of biniodide of mercury with the aconite. Give every 1 to 3 hours according to the age.

Homeopathic Treatment.—At first give the second dilution of Aconite. Put 10 to 15 drops in a glass half full of water and give 2 teaspoonfuls every half hour to three hours according to the age of the patient.

Give tincture of camphor, 1 drop every 1 to 3 hours, where there is much sneezing and water keeps dropping from the nose.

When the nose is stopped up and there is sneezing and hot burning water coming from the nose give the third trituration of Arsenicum. Give one tablet every 1 to 3 hours.

If there is a thick discharge give the third trituration of Mercurius Sol. Give 1 tablet every 1 to 3 hours.

Also frequently rub on the outside a salve made with camphor and cream.

PEOPLE'S HOME REMEDIES.—

1. **Onion Poultices, Etc., for Cold on the Lungs.**—Make a poultice of onions fried in lard and lay on the chest. Soak the feet in as hot water as can be borne and drink a glass of hot lemonade and, if you have it, a little senna tea before going to bed.

Physician's Remark.—Lemonade will cause sweating, senna will move the bowels and the onions will loosen the cold by drawing the congestion from the lungs.

2. **Camphor and Sugar for Cold in Head.**—One of the very best remedies for a cold in the head is to put one or two drops of spirits of camphor on a lump of sugar, dissolve the sugar in half a glass of water and take a teaspoonful every two hours.

Physician's Remark.—Camphor will frequently stop a cold if taken at the beginning.

3. **Castor Oil, Molasses, Etc., for Snuffles or Cold in Head.**—Keep the bowels open with castor oil and molasses and grease the nostrils with mutton suet, sweet oil or lard.

4. **Sage, Pennyroyal or Balm Tea.**—Keep the bowels open and give a dose of sage, pennyroyal or balm tea.

5. **Camphorated Olive Oil.**—Relief is often obtained by rubbing the nose with camphorated olive oil.

6. **Onion Syrup.**—Give onion syrup made as follows.—Slice an onion into a granite basin and add 1 tablespoonful of sugar and a small lump of butter and simmer on the stove until thoroughly cooked and give a teaspoonful or two of the juice every little while. Sometimes it is necessary to add a little water.

7. **Skunk's Oil.**—Applied to the throat and lungs this is a good remedy for a cold on the lungs. Sometimes it is given internally in small doses.

8. **Peppermint and Suet.**—Two or three drops of peppermint mixed

with an equal amount of suet and rubbed over the baby's chest gives quick relief in case of a cough or cold on the lungs.

9. **Elder Flowers and Honey.**—A remedy which comes from Russia prescribes a tea made from elder flowers and sweetened with honey. Either fresh or dried flowers may be used. Cover up warmly in bed and drink freely of the tea to induce sweating.

10. **Camphor, Turpentine, Kerosene and Lard for Colds, Coughs and Croup.**—The following is excellent for these ailments. Saturate a flannel in a mixture of one part each of spirits of camphor and turpentine and two parts each of kerosene and lard. Apply warm to the throat and chest.

11. **Balm of Gilead Buds, Honey and Lemon Juice.**—To a quart of water add two ounces of balm of Gilead buds, simmer down to a pint, strain and add a pound of comb honey and the juice of three lemons. Boil together until the wax in the honey is dissolved. This will cure coughs of long standing.

12. **Borax and Sugar.**—For a cold in the head nothing is better than powdered borax snuffed up the nose. Some add a little pulverized sugar. Some also dissolve a tablespoonful of borax in a pint of water and snuff this borax water two or three times a day.

13. **Hot Lemonade.**—Take just before going to bed. This is an old and tried remedy for a cold.

14. **Camphor.**—A little camphor snuffed up the nose relieves a cold in the head almost instantly.

Physician's Remark.—The camphor tends to dry up the secretion and is a very good remedy.

15. **Hot Roasted Onion.**—Eat a hot roasted onion or onion syrup before going to bed. The onion is a fine thing for colds.

Physician's Remark.—The onion syrup is better for a cough.

16. **Hot Foot Bath and Hot Lemonade.**—Bathe the feet in hot water and drink a teacupful of hot lemonade before going to bed.

17. **Salt, Sugar and Water.**—In the first stage a cold may be cured by eating a mixture of $\frac{1}{3}$ salt and $\frac{2}{3}$ sugar and then drinking all the water that the salt and sugar cause you to want, as both cause thirst.

18. **Lard, Camphor, Turpentine, Kerosene, Etc.**—For children give a warm bath, being careful to let no cold air strike the child. Rub the chest, arm pits and soles of the feet with a preparation of tallow or lard, a small piece of camphor gum, 1 teaspoonful of kerosene, $\frac{1}{3}$ spoonful of turpentine and $\frac{1}{3}$ spoonful of quinine, melted together slowly. If the cold is severe wet a flannel cloth with the preparation and place over the chest then put the child to bed and cover closely. Morning should find the child much better.

19. **Turpentine, Ammonia, Etc.—Cold in Throat and Lungs.**—Add to a small lump of lard a little of each of the following: camphor, turpentine, coal oil and ammonia. Heat these together and apply to the surface hot and then cover with a flannel cloth.

20. **Sulphur for the Throat and Bronchial Tubes.**—For a tickling in the throat or a chronic affection of the bronchial tubes take 5 or 10 grains of dry sulphur into the mouth on the back part of the tongue and retain it there for a long time swallowing but a little at a time.

21. **Diet for a Cold.**—When you discover you have a cold do not eat any supper and, upon retiring early in the evening, drink at least a pint of cold water. Keep comfortably warm for at least three days if possible. Eat

raw apples as your principal diet. Do not over eat and abstain from meat and pastry entirely. A cold should be starved.

Physician's Remark.—Water and apples are laxative and cleansing.

22. Sweating for Severe Cold and Congestion.—Have the patient sit in a tub of water as warm as he can bear. (A sitz bath is best but any tub will do.) Place the feet in a large pail of hot water and pin heavy woolen blankets or other bed clothing around the neck. Place a towel wet in cold water on the head. Frequently give the patient cold water to drink. Keep adding hot water to the tub and keep the patient in the bath until he sweats and feels relaxed. Have plenty of towels ready. When you take him out, while he stands in the tub, sponge him off very quickly with water with the chill taken off and rub briskly with towels and immediately put to bed in a warm room. There should be one or more attendants if possible. The bed should not be cold and the patient should be covered warmly and allowed to rest.

Physician's Remark.—This is a very fine treatment for colds.

23. Horehound Candy.—Dissolve about two sticks of horehound candy in half a cup of boiling water and drink while hot before going to bed.

Physician's Remark.—Horehound is an expectorant and is good for a cold on the chest.

24. Wild Cherry Bark and Loaf Sugar.—Put ten cents worth of wild cherry bark into a quart of water and boil down to a pint; add a pound of loaf sugar, strain and take a teaspoonful every half hour. This is fine.

Physician's Remark.—Wild cherry is a sedative and reduces the cough and is an expectorant, and diminishes nervous irritability.

25. Quinine and Grease.—For babies, rub with quinine and grease.

26. Hot Lemonade and Flaxseed.—Hot lemonade with flaxseed simmered in it for half an hour, then strained and sweetened, is an excellent remedy. Take just before going to bed as it produces sweating.

Physician's Remark.—Lemonade causes sweating and flaxseed is soothing and laxative.

27. Camphor.—Put nine drops of camphor into half a glass of water and give one teaspoonful every fifteen minutes.

28. Hot Towel for Congestion of the Lungs.—Fold a large towel several times, wring out of hot water, and quickly apply to the chest. Change as often as it becomes cool.

Physician's Remark.—This draws the blood from the lungs to the surface and thus relieves the congestion.

29. Lard, Ammonia and Camphor for Congestion of Lungs.—To two parts of lard add one part of ammonia, heat the mixture, spread on cotton batting and apply to chest. Also mix some camphor with this.

30. Camphorated Lard for Congestion, Lung Fever or Cold on the Lungs.—Take four tablespoonfuls of lard, melt and stir in five cents worth of gum camphor. Apply to the chest and throat and cover with flannel. "The doctor cured my granddaughter of lung fever with this application," says one mother.

31. Antiphlogistine.—Apply antiphlogistine to the chest.

32. Lard and Quinine.—For congestion of the lungs add a good-sized powder of quinine to one teaspoonful of lard, mix, and grease the chest well and also around the arms, always rubbing downward; then heat woolen cloths as hot as can be borne and lay across the chest.

33. **Onion Poultices.**—Make hot poultices of onions and apply all over the chest. Apply as hot as can be borne. This remedy has saved many lives.

34. **Pleurisy Root, Etc.**—Take two ounces each of powdered pleurisy root, powdered spearmint and powdered sumach berries; one ounce each of powdered bayberry bark and powdered skunk cabbage and one-half ounce of powdered ginger. Two teaspoonfuls of this mixture may be steeped in one-half pint of boiling water, sweetened and drank in wineglassful doses every hour or two. In common colds, half a pint of the warm tea may be taken at once. Repeat, if necessary, in an hour.

35. **Honey and Lemon Juice.**—Flavor strained honey with lemon juice and take a teaspoonful every half hour for a cough.

36. **Honey, Vinegar and Butter.**—Heat together some honey and vinegar and melt a little fresh butter in the mixture. Take one or two teaspoonfuls as often as necessary for a cough.

37. **Vinegar, Molasses, Honey, Camphor and Ipecac.**—Put four ounces each of vinegar, molasses and honey into an earthen vessel and stir them well while simmering for a few minutes. Then add a dessert spoonful each of compound tincture of camphor and ipecac wine. Give a dose every four hours. This makes an excellent cough syrup.

38. **Roasted Lemons.**—The juice of a roasted lemon sweetened to taste is one of the most excellent and effective remedies ever used for a cough of long standing. The dose is a tablespoonful every two or three hours. This remedy was given us by an old German lady who secured it from her physician in Germany.

39. **Honey, Flaxseed Oil and Whiskey.**—Equal parts of honey, flaxseed oil and whiskey; mix, and give a teaspoonful as the cough requires.

Physician's Remark.—This loosens the cough and soothes the inflamed parts.

40. **Wild Cherry Bark, Loaf Sugar and Cayenne Pepper.**—Make a syrup of wild cherry bark and loaf sugar with a little cayenne pepper added.

Physician's Remark.—Wild cherry aids in getting rid of the mucus and lessens the cough.

41. **Rum, Linseed Oil and Molasses.**—Equal parts of rum, linseed oil and molasses; one teaspoonful three times a day. This is for coughing.

42. **Vinegar and Sugar.**—A simple remedy for a cough or cold which affects the throat is 5 teaspoonfuls of vinegar, 6 teaspoonfuls of sugar and 1 tumbler of water. Stir until the sugar is dissolved then take one or two swallows each time you cough or once in ten or fifteen minutes until relieved.

43. **Onion Syrup.**—Take 1 quart of cistern water, 1 cup of sugar and 3 small onions and boil together. This is an excellent remedy for coughs.

44. **Glycerine and Whiskey.**—Take equal parts of each.

45. **Licorice, Linseed Oil, Glycerine, Etc.**—One-half ounce of paregoric, $\frac{1}{2}$ ounce of extract of licorice, $\frac{1}{2}$ ounce of chloroform, $\frac{1}{2}$ ounce of linseed oil, $\frac{1}{2}$ ounce of extract of lemon, $\frac{1}{2}$ ounce of glycerine and one pound of white sugar. Take one teaspoonful as needed for a cough. This remedy is for adults only.

46. **Vinegar, Honey, Molasses, Horehound, Etc.**—Take a pint of vinegar, a teacupful each of honey and molasses and a small handful of bruised horehound leaves. Simmer over the fire for fifteen minutes, strain, squeeze out, and add an ounce each of wine of ipecac and tincture of lobelia. The dose is a teaspoonful or two as often as required for a cough.

47. **Whiskey, Glycerine and Rock Candy.**—Take $\frac{1}{2}$ pint of whiskey, 4 ounces of glycerine and 1 ounce of rock candy. The dose is a teaspoonful three or four times a day or when the cough is troublesome. A lady living in Alliance, Ohio, writes that this is the only medicine that has ever helped her.

48. **Molasses, Sugar, Lemon, Glycerine, Etc.**—Take 1 cup of molasses, 1 tablespoonful of dark brown sugar and 1 lemon, rind and all, cut very fine. Let all boil over a slow fire until it begins to thicken; then remove from the fire and add 1 tablespoonful of glycerine and enough good vinegar to make it taste sharp. Take a teaspoonful when you cough. This is fine.

49. **Molasses, Sulphur, Cayenne Pepper and Sweet Cream.**—Take $\frac{1}{3}$ cup of molasses, 1 large teaspoonful of sulphur, $\frac{1}{4}$ teaspoonful of cayenne pepper and 3 large spoonfuls of sweet cream. Take a little in the mouth and swallow slowly whenever the cough is troublesome.

50. **Licorice, Gum Arabic and Loaf Sugar.**—Take 2 ounces of gum arabic, 3 ounces of licorice and 3 ounces of loaf sugar and dissolve all in 1 quart of boiling water. Take 2 tablespoonfuls 3 times a day. "I have used this for children and find it heals and cures the cough," says a mother living in McKees Rocks, Pa.

51. **Glycerine, Rock Candy and Whiskey.**—One-half pint of glycerine, $\frac{1}{2}$ pound of rock candy and $\frac{1}{2}$ pint of whiskey. Pour the whiskey on the candy and let the same dissolve, then pour in the glycerine. Shake well before using. Take every two hours until the cough is relieved.

52. **Dr. Leonard's Cough Syrup.**—One-half ounce of laudanum, 1 ounce of spirits of nitre, 1 ounce of tincture of blood root, 2 ounces of syrup of squills, 2 ounces of essence of wintergreen and 1 pint of honey. Dose, 1 teaspoonful three or four times a day. This is known as Dr. Leonard's Cough Syrup and is fine. (For adults.)

53. **Cough Syrup.**—Take equal parts of the following herbs and steep to make a tea—everlasting, catnip, thoroughwort, pennyroyal and mullein. Cook as much sugar and molasses, half of each, with the tea as you have tea. Boil until a syrup is formed. Take a teaspoonful at a time. If the cough is bad take every little while. "This is fine," says a lady living in Greenville, Rhode Island.

54. **Sugar and Ginger.**—Take equal parts of dry sugar and ginger, mix well and take a little when the cough is troublesome and especially at night.

55. **Salt and White of Egg.**—Beat the white of an egg stiff, add a small pinch of salt and take a teaspoonful when the cough annoys.

56. **Horehound, Glycerine and Rock Candy.**—Take five cents worth each of glycerine, rock candy and horehound drops. Put the rock candy and drops on the stove with a little water and simmer until dissolved, then add the glycerine. Make about $\frac{2}{3}$ of a pint in all. Give a teaspoonful every two or three hours until relieved from the coughing. This is very good.

57. **Horehound, Paregoric and Brown Sugar.**—Take five cents worth of horehound leaves, 1 ounce of paregoric, 1 pound of brown sugar and 1 quart of water. Steep the horehound in the water, then strain and boil with the sugar until reduced to one pint and when cool add the paregoric. Bottle for use in coughs.

58. **Garlic Juice.**—Take garlic juice. The dose is half a dram. This is also good for nervous and spasmodic coughs in children. The bruised bulbs,

applied as a poultice on the chest and spine, are very good for children with pneumonia.

59. **Onion Juice.**—Onion juice mixed with syrup is very good for coughs and colds on the chest of a child.

60. **Marshmallow Tea.**—Marshmallow root made into a strong decoction by using 2 ounces of the root to a pint of boiling water and then drank freely is good for coughs and hoarseness.

61. **Sunflower Seeds, Gin and Sugar.**—Put two pounds of bruised sunflower seeds into 5 gallons of water, boil down to 3 gallons, strain, and add 12 pounds of sugar and $1\frac{1}{2}$ gallons of Holland gin. The dose is from 2 drams to 2 ounces 3 or 4 times a day or oftener for a cough, tickling in the throat, etc.

62. **Wild Cherry Syrup.**—Syrup of wild cherry is very good. This is for coughing and hoarseness.

63. **Flaxseed Tea.**—Steep $\frac{1}{2}$ ounce of unbruised flaxseed in $\frac{1}{2}$ pint of boiling water. Fine for coughs.

64. **Comfrey and Indian Turnip.**—Take 3 parts of comfrey root and 1 part of green Indian turnip root, bruise together into a fine paste and add 2 parts of refined sugar and mix thoroughly. A tablespoonful of this may be eaten three or four times a day.

65. **Lung Balsam.**—First. Take of the roots of spikenard, elecampane, comfrey and blood root, of the leaves of horehound, and of the bark of wild cherry, of each 1 pound; grind and mix the articles together. Place all in a vessel, cover them with 76 per cent. alcohol and let them steep for 3 days. Then transfer the whole to a filter (use filter paper and funnel) and gradually add hot water until 3 pints of the alcoholic tincture have been obtained which retain and set aside.

Second. Continue the process and of this second solution reserve as much as contains a sensible amount of spirits and evaporate the alcohol from it.

Third. Continue the filtering of the rest by adding hot water until the solution obtained is almost tasteless and boil this down until when added to the second, after the evaporation of its alcohol, it will make 18 pints. To these two solutions combined, add 24 pounds of refined sugar and dissolve by heat, removing any scum. If it exceeds 24 pints, evaporate to that amount with constant stirring. Then remove from the fire and when nearly cold add the 3 pints of first solution set aside and make 3 gallons of syrup. This is good for obstinate coughs, bronchitis and lung affections generally. The dose is $\frac{1}{2}$ ounce 3 times a day.

66. **Horseradish, Boneset, Etc.**—The following makes a good syrup for coughs, colds, hoarseness, chronic irritation of the throat and fevers. Fresh horseradish root, grated, 2 ounces; boneset, leaves and tops, 1 ounce; Canada snake root, $\frac{1}{2}$ ounce; refined sugar, 2 pounds and a sufficient quantity of diluted vinegar and boiling water. Directions: steep the boneset and snake root in $\frac{1}{2}$ pint of boiling water and press with strong pressure, adding boiling water to the mass until $\frac{1}{2}$ pint of the tea is obtained. then add the sugar and dissolve with gentle heat. Now add the horseradish to $\frac{1}{2}$ pint of diluted vinegar, let stand 2 days and then press, adding diluted cider vinegar to the mass until $\frac{1}{2}$ pint of the dilution is obtained. Add this to the above syrup and shake. Dose: 1 to 4 drams every 2 to 3 hours.

67. **Boneset, Horseradish, Vinegar and Molasses.**—Put 1 ounce each of

horseradish root and boneset leaves into 1 pint of hot water. Cover and let stand for 2 hours near the fire, then add $\frac{1}{2}$ pint of vinegar and molasses and boil for 15 minutes. Take a tablespoonful every 2 or 3 hours. For coughs and hoarseness.

68. **Borax.**—For hoarseness let a piece of borax the size of a pea dissolve slowly in the mouth, swallowing part of it. It will give almost immediate relief for an hour or two and is used by many of our public speakers.

69. **White of Egg.**—Put the white of an egg into half a glass of warm sweetened water and beat to a froth. Used as a gargle this will relieve hoarseness and tickling of the throat.

70. **Steaming with Vinegar and Water.**—For sore throat, coughing and hoarseness, steam the throat with 1 part of vinegar to 6 parts of water. Put the vinegar and water into a teapot or teakettle and put one end of a roll of paper over the spout and the other end in the mouth and breathe it through the mouth as hot as possible.

Physician's Remark.—The hot steam takes away the inflammation, relaxes the membrane and thus causes it to pour out its natural secretions.

71. **Hot Lemonade.**—For colds, coughs and hoarseness, drink hot lemonade.

72. **Honey and Vinegar.**—A little in the mouth every little while for coughs and hoarseness.

73. **Lemon Juice, Sugar and Glycerine.**—Lemon juice, squeezed into soft sugar until it is like syrup and a few drops of glycerine added, relieves hoarseness.

74. **Horseradish, Vinegar, Honey, Etc.**—Take 4 ounces of grated fresh horseradish and let it stand in a pint of good vinegar over night, then add a pint of honey and bring it to the boiling point, then strain and squeeze out. Take 1 or 2 teaspoonfuls several times a day. Very good for hoarseness, loss of voice and all ordinary coughs.

75. **Onion Juice and Sugar.**—Take a good-sized onion and bake in a hot oven, press out the juice, mix with sugar, and take a little of it every few minutes. A lady in Ohio says she has frequently tried this for coughs and hoarseness with good results and many others all over the country can say the same thing.

76. **Lemon Juice and White of Egg.**—The white of an egg beaten to a stiff froth and whipped up with the juice of a lemon and a teaspoonful taken every hour will relieve hoarseness and coughing.

77. **Chammomilla Tea.**—When hoarseness occurs in children and is attended with a rough, dry cough, mucus and soreness in the throat and with fever in the evening, give chammomilla tea every 4 or 6 hours. Use no external application but pay proper attention to warmth and strictly avoid a variable temperature or humid atmosphere.

78. **Milk and Red Pepper.**—For hoarseness take milk and red pepper every little while.

79. **Onion.**—Boil a good-sized onion in a syrup made of sugar and water and eat it all and more if necessary. Then go to bed and take a good sweat and cool off very slowly. This will break up the cold.

80. **Cold Water Cloths.**—For sore throat apply cloths wrung out of cold water.

81. **Sore Throat.**—A student at Denison University which is located at Granville, Ohio, says that as soon as he feels sore throat coming on he im-

mediately exercises the muscles of the throat as much as possible, moving them in every possible way and rubbing them with the hands. He says this has given him splendid results and his explanation is that it establishes a better circulation in these parts.

82. Dr. Ritter's Cough Cure.—We have here a long list of most excellent remedies for these troubles and they are gathered from all over the world. To make the list complete I am going to give a combination of my own that I have prescribed many times with the very best of results. It is to be used when you have a hard, tight and distressing cough and must cough for some minutes before relief is obtained. Take chloride of ammonia, $2\frac{1}{2}$ drams; paregoric, 1 ounce; hive syrup, 6 drams; and to this add either syrup of wild cherry or fluid extract of licorice, enough to make 4 ounces in all. Shake thoroughly and take a teaspoonful every 3 or 4 hours. (Author.)

CHRONIC NASAL CATARRH.

Chronic Rhinitis.

This disease is too well known to need description.

Causes.—Colds of long standing and adenoids in the throat, polypi in the nose and perhaps foreign bodies like buttons, etc., in the nasal passages. A person who is in a "run down" condition is most likely to have catarrh. **TREATMENT.**—

Preventive.—Regulate the diet and the bowels and tone up the system with iron or arsenic if necessary. Give a tablespoonful of cod liver oil four times a day and from five to twenty drops of syrup of iodide of iron four times a day. Avoid taking cold as much as possible and keep the passages of the head clean. Spray the throat and nose passages with Dobell's or Seiler's solution diluted with an equal amount of water. As a preventive of catarrh it is often necessary to remove adenoids and polypi from the throat and nose.

General Treatment.—

As a spray use 1 ounce of listerine, $\frac{1}{2}$ dram of sodium bicarbonate or common baking soda, and 4 ounces of sterilized water. If used with a syringe add twice as much water. Ordinarily this is to be used twice a day.

Once a day after cleansing you can use sulpho-carbolate of zinc. Use five grains to 1 ounce of water. Drop some of this solution into the nose with a medicine dropper while the head is thrown back.

If possible move to some dry, unchangeable climate. Beware of quacks who are after your money. Keep the nasal passages thoroughly clean with some simple douche. The Birmingham Nasal Douche is a simple and very satisfactory one. Fill it with the following solution: soda, $1\frac{1}{2}$ drams and listerine 6 drams. Use every night and morning. Take a teaspoonful of tincture of skunk cabbage four times daily.

Thoroughly mix 14 grains of camphor with 16 grains of menthol and then mix this thoroughly with enough white vaseline to make an ounce in all. When you have this ointment prepared have the druggist give you a small glass tube about a quarter of an inch in diameter and four or five inches long. The medicine and tube will probably cost you about a quarter and the ointment will last a long time. Dip the tube into the ointment and take up a little of it and then insert the tube in the nostril and press the nostril around the tube so that it fits tightly, then close the other nostril and give a quick snuff which will draw the ointment well up into the head. Do the

same with the other nostril. Use this two or three times a day. It will thoroughly clear out the passages and help the worst case of catarrh. Also use this for a fresh cold. This is a very valuable prescription that will save you money and help your catarrh.

PEOPLE'S HOME REMEDIES.—

1. **Salt Water.**—Dissolve half a teaspoonful of table salt in a quart of water and snuff some of this solution up the nose several times a day. This remedy, though simple, is one of the most effective in use.

Physician's Remark.—Salt is an astringent and is also somewhat anti-septic.

2. **Borax Water.**—A solution of borax in the proportion of from 5 to 20 grains to an ounce of water is excellent when snuffed up the nose. It thoroughly cleanses the passages of the head and allows nature to do the healing.

3. **Carbolic Acid Water.**—One of the best remedies is from 1 to 7 grains of carbolic acid to an ounce of water. Snuff up the nose or use in a douche or atomizer. This is especially good when there is a bad odor from the nose.

4. **Salt, Borax and Soda.**—To half a pint of rain water add an ounce each of common table salt, powdered borax and baking soda. When dissolved take 1 tablespoonful of the solution to 2 or 3 tablespoonfuls of warm water and snuff up the nostrils at bed time. This is one of the finest remedies used. The salt stimulates, the soda soothes, and the borax cleanses and heals. What more could any remedy do even if you paid a dollar a bottle for it at the drug store?

5. **Cubeb Berries.**—Smoke cubeb berries in a clay pipe and inhale the smoke. These berries may be purchased at any drug store at a trifling cost and are used quite extensively.

Physician's Remark.—Powdered cubebs have a fine action on the nasal mucous membrane and are of value in the treatment of catarrh.

6. **Burnt Alum.**—Burnt alum pulverized and snuffed up the nose has cured many cases of catarrh.

7. **Sulphur and Whiskey.**—Add two ounces of sulphur to a pint of whiskey, shake and take a tablespoonful three mornings, then miss three mornings, and so continue until the whole is taken.

Physician's Remark.—This is good for the blood.

8. **Borax and Loaf Sugar.**—An excellent catarrh snuff is made by mixing a dram of powdered loaf sugar with 2 ounces of pulverized borax. This remedy will cost five or ten cents at the drug store if you do not have it already in the house. It can be put into a small pill box and carried in the pocket. Use it as a snuff 8 or 10 times daily. This will last for a long time and save a dollar or two that would otherwise be paid for a patent medicine.

Physician's Remark.—This cleanses and soothes the passages of the head.

9. **Castile Soap and Water.**—A very effective remedy for catarrh is castile soap and water snuffed up the nostrils.

10. **Sulphur, Elecampane, Licorice and Honey.**—Take equal quantities of powdered sulphur, elecampane and licorice and mix with strained honey to make a thick heavy paste. Take a piece about the size of a walnut every morning and evening.

Remark.—A lady living in Massachusetts writes: "My father had catarrh for years and was cured by this remedy and I have since used it myself with beneficial results."

11. Camphorated Oil.—Snuff the oil up the nostrils and the nose will clear immediately. Use two or three times a day. A lady living in Columbus, Ohio, says that this is good for any nasal trouble as she has found by experience.

HAY FEVER. Autumnal Catarrh.

Hay fever is an affection of the upper air passages. It generally comes on about the middle of August and continues until a good frost.

TREATMENT.—

Change of climate. Dry mountain air is the best. Sometimes a visit to the seaside is good. But we cannot all take this treatment so I will give some local treatments also. Cocaine applied to the nostrils is good but is rather dangerous for any one but a doctor to use. Spray the air passages with a 1 to 5,000 solution of adrenalin chloride and, after using this, use some mild alkaline spray like Dobell's solution.

As a spray for the nose and throat the following is a good mixture—borax, 2 drams; soda, 2 drams; carbolic acid, 24 grains; and water, 1 pint.

Another good treatment is menthol, 6 grains; camphor, 6 grains and liquid albolene, 1 ounce. Use as a spray.

MEMBRANOUS CROUP OR TRUE CROUP.

(See Laryngeal Diphtheria.)

SPASMODIC CROUP.

False Croup, Pseudo Croup, Catarrhal Croup, Spasmodic Laryngitis.

Description.—This is a disease of the larynx that is most common between the 2nd and 5th years but it also occurs in very young infants. One attack leaves a person more subject to another.

Causes.—Exposure to cold and wet very often bring on an attack of croup. Like the majority of catarrhal inflammations of the air passages this disease is due to the invasion of bacteria or germs.

Symptoms.—Spasmodic croup causes much anxiety to mothers when the first attack develops without warning. During the day the child may have a slight cold. Toward evening a harsh or "croupy" cough, accompanied by heavy or spasmodic breathing and a husky voice, suddenly develops. In some cases the symptoms remain mild and only the cough disturbs the child and its breathing is not much affected. In other cases the child goes to sleep apparently well but during the night it suddenly awakens with a harsh, shrill, barking cough which is repeated at intervals and rapidly gets worse. The breathing is noisy and may be heard in an adjoining room. The cough is especially terrifying. The child is restless and may cry during a spell of coughing. It sits up for it cannot breathe easily when lying down. The face is of a pale bluish color and wet with a cold sweat. The child can speak only in a hoarse whisper and sometimes the voice is nearly or entirely lost. Toward morning the cough and difficult breathing get better and the child falls asleep worn out by the night's suffering. Next day the child acts apparently well but there is a slight cough, running from the nose, swollen tonsils and a red throat. But these attacks may be repeated for two or three successive nights.

TREATMENT.—

Preventive Treatment.—Keep the feet dry and do not take cold.

Emergency Remedy or "What to Do."—Give an emetic or something to make the child vomit and clear the throat of the phlegm. For this purpose you can give a tablespoonful of goose grease or a teaspoonful of powdered alum mixed with molasses or, if nothing else is at hand, mix a little lard with three times as much pulverized sugar and give a teaspoonful every fifteen minutes till the child vomits. From $\frac{1}{2}$ to 1 teaspoonful of dissolved white vaseline is also good. Also apply cloths wrung out of cold water to the throat. These should be changed frequently to keep them cold. Keep the child in bed and keep the bowels open.

Caution or "What Not to Do."—In applying cold or hot cloths do not allow the water to drip or run upon other parts of the body. Do not allow the child to go from a warm to a cold room or to take cold in any way.

Allopathic Treatment.—Wine of ipecac is good. Give 10 drops at a dose. This is especially good to produce vomiting if the stomach is filled with food. From 1 to 2 drops of fluid extract of ipecac is good and may be repeated in half an hour if necessary.

Dr. Douglas, of Detroit, is a specialist on children's diseases and the following is taken from his book. It is a good croup mixture to keep on hand if the children are subject to attacks of croup. Take syrup of ipecac, 3 fluid drams; Hive syrup, 4 fluid drams and water, $1\frac{1}{2}$ ounces. Mix thoroughly and shake before using. Give half a teaspoonful every half hour until the child vomits and then repeat the dose every 2 to 3 hours as needed.

Homeopathic Treatment.—Give the third trituration of Hepar Sulphur. Give one tablet in hot water every 15 minutes until relieved. This is better for light haired people and when the cough is a little loose. It is a strange thing but it is true that some medicines affect light and dark complexioned people differently.

Give the third trituration of Spongia. Give one tablet in hot water every 15 minutes until relieved. This is better for children with a dark complexion and when the cough is very harsh and tight.

If there is much fever give the second dilution of Aconite. Put 10 drops into half a glass of water and give 2 teaspoonfuls at a dose. Alternate this with the Hepar Sulphur or the Spongia above.

Simple Treatment and Nursing.—Apply cold cloths or an ice bag to the throat. Hot cloths are sometimes used. In applying cloths of either cold or hot water they should be covered with a dry flannel cloth so that none of the water drips or runs upon other parts of the body. The application of an onion poultice is an old and tried remedy. Fry some onions in lard, not too dry, and apply to the throat and chest. Change often so as to keep the poultice moist and hot. This is good for the cough and tight breathing and relieves the pain.

PEOPLE'S HOME REMEDIES.—

1. **Cold Water Cloths.**—Cloths wrung out of cold water should be applied to the throat and changed frequently. These wet cloths should be covered with a dry flannel cloth. More than one child owes its life to its mother's knowledge of this effective treatment.

Physician's Remark.—This is a splendid remedy but be careful not to allow the water to run upon other parts of the body.

2. **Mustard and Bran Poultices.**—Apply either a mustard or a hot bran poultice to the neck.

Physician's Remark.—This produces counter-irritation and thus relieves the congestion.

3. **Hot Water.**—One mother applies a sponge wet in water to the child's neck as hot as can be borne. This is highly recommended for croup. It should be renewed as frequently as it becomes cool until the skin is quite red or until the child is better.

4. **Alum and Honey or Molasses.**—The favorite remedy of many mothers is to give a teaspoonful of powdered alum in a little honey or molasses every ten minutes until the child vomits.

5. **Lobelia.**—The first thing to do is to clear the throat of phlegm by giving an emetic. Tincture of lobelia is one of the best things for this purpose. Fifteen drops should be given every 10 minutes until the child vomits.

Physician's Remark.—This is a depressing remedy and should not be used unless other remedies fail.

6. **Roasted Onions.**—Applied to the throat, chest, feet and hands these have saved the lives of many children. This remedy is a simple and effective one that every mother should know about in case of an emergency.

7. **Apples and Cranberries.**—Roasted apples and cranberries are both recommended as applications for the throat.

8. **Snuff and Lard.**—Many consider a plaster made of snuff and lard the best application for croup. A teaspoonful of snuff should be mixed with a little lard, spread upon a cloth, and applied to the throat and chest.

9. **Camphor and Vinegar.**—When croup is first noticed apply to the throat some cotton wet in equal parts of camphor and vinegar. Warm whiskey applied in the same way is also good.

10. **Poultice of Slippery Elm, Lobelia and Red Pepper.**—If other remedies fail, try a poultice made of slippery elm, lobelia, red pepper and hot water. It should be applied to the throat and chest and changed as rapidly as it cools.

11. **Hops, Vinegar and Horseradish.**—If the child is very young apply a poultice of hops boiled in water. During the day when it seems better give a tea made of horseradish and vinegar.

12. **Baking Soda and Molasses.**—Mix equal parts of baking soda and molasses and for a child two years old give a teaspoonful at a dose. Repeat at short intervals until the phlegm is all thrown up.

13. **Castor Oil and Onion Juice.**—Grate a raw onion, squeeze out the juice and add half as much castor oil as you have of the juice. Keep in a bottle well corked, shake before using, and give a teaspoonful every two or three hours.

14. **Lard and Sugar.**—To one part of sweet lard add three parts of pulverized sugar, mix thoroughly and give a teaspoonful every 15 minutes until vomiting is produced.

15. **Hot Water Cloths.**—Wring a flannel out of hot water and apply to the neck of the child. This will usually give relief in a few minutes.

16. **Turpentine.**—Wet a flannel with turpentine and place on the throat and chest and if the case is severe give from 2 to 5 drops on a piece of sugar.

Physician's Remark.—Turpentine does the work by drawing the blood away from the parts and thus relieving the congestion.

17. **Warm Butter.**—Give some warm melted butter. About a tablespoonful may be given.

18. **Goose Grease.**—Give a tablespoonful of goose grease as often as is necessary to cause vomiting.

19. **Sulphur Water.**—Put a teaspoonful of sulphur into a cup of water and allow it to stand for two hours, then strain and use the water. Give a teaspoonful every two hours. A lady in Maine says she has found this a fine remedy for croup. This is for use the day after the attack.

20. **Lard and Snuff.**—Take a piece of muslin large enough to cover the upper part of the chest and tie it about the neck with strings. Spread some lard over the muslin and sprinkle with Scotch snuff. Put a flannel over all this. If applied early it will always give relief.

21. **Hive Syrup, Cosmoline and Nutmeg.**—Give Hive Syrup according to the directions on the bottle. Spread some flannel with cosmoline, sprinkle thickly with grated nutmeg and keep on the chest, well up towards the throat, until the patient is better.

22. **Kerosene and Sugar.**—Give 5 or 6 drops of lamp oil on a lump of sugar. Repeat if necessary. Also apply hot or cold applications externally.

ACUTE CATARRHAL LARYNGITIS.

Inflammation of the Larynx.

Causes.—The causes are—catching cold, over using the voice, breathing irritating gases, injuries and hot liquids and corrosive poisons accidentally going into the larynx (Sunday throat) instead of the gullet.

Symptoms.—There is tickling in the larynx or near the Adam's apple. Cold air is irritating. There is a dry cough and dry husky voice and the voice may even be lost altogether for a time. In adults the breathing is not much affected. Children may have hard spasmodic breathing.

TREATMENT.

Allopathic Treatment.—Allow the larynx to have rest, keep in bed if the case is severe and have an even temperature. Early in the attack give aconite. The dose is from $\frac{1}{2}$ to 1 drop and is to be given every 1 to 3 hours according to the age. Also give citrate of potash. The dose is from 10 to 40 grains. For the irritating cough give 10 grains of Dover's powder at night for an adult.

Homeopathic Treatment.—Give the second dilution of Aconite. Put 10 or 15 drops into a glass half full of water and give 2 teaspoonfuls every $\frac{1}{2}$ to 3 hours according to age. After 24 hours give the second dilution of Belladonna instead of the Aconite. It should be prepared and given in the same way. For the loose cough give the third trituration of Hepar Sulphur. Give 1 tablet every 1 to 3 hours.

Nursing and Diet.—Apply cold cloths or an ice bag to the throat. Hot cloths are sometimes used. In applying cloths of either cold or hot water they should be covered with a dry flannel cloth so that none of the water drips or runs upon other parts of the body. The application of an onion poultice is good. Fry some onions in lard, not too dry, and apply to the throat. Change often so as to keep the poultice moist and hot. This is good for the cough and tight breathing and relieves the pain.

Hot bland drinks, hot milk, hot lemonade or hot teas are good. Fold a handkerchief, wring out of cold water and lay upon the larynx or Adam's apple and immediately cover with a piece of cloth or flannel bound around the neck. Make the room moist by steam from a kettle or by adding pieces of unslacked lime to a tub of water or use the croup or bronchitis tent as described in the "Nursing Department." Keep the patient in a room with

the temperature from 70 to 72 degrees. Give a hot mustard foot bath and hot lemonade with a teaspoonful of sweet spirits of nitre in it at bed time to produce sweating. For an adult you can give 10 grains of Dover's powder instead if you wish. If the trouble affects the glottis a tube may need to be placed in the throat to allow breathing. In inflammation of the larynx the patient should be kept in bed and the bowels should be kept open.

SWELLING OF GLOTTIS.

Oedema Glottis—Oedematous Laryngitis.

This is a very serious affliction but fortunately it does not occur very often.

Causes.—Sometimes follows acute laryngitis or glandular throat trouble. Caused by swelling pressing on the glottis.

Symptoms.—There is short breath and hard breathing and in an hour or two the condition is very serious. The breathing is noisy and hissing and is attended with a choking sensation.

Treatment.—Apply an ice bag to the throat and if the symptoms are urgent an operation may be necessary. This disease is not frequent unless the patient has tuberculosis or syphilis of the larynx. It sometimes follows laryngitis and diphtheria.

SPASM OF GLOTTIS.

Spasmodic Laryngitis—Child Crowing.

Description.—This is a nervous affection and no inflammation exists. It occurs in children between the ages of six months and three years and is commonly in connection with rickets. Mothers sometimes call the attacks, "holding the breath" or "passion fits."

Symptoms.—The attacks may come on at any time; often just as the child awakens. There is no cough but the breathing is checked, the child struggles for breath, gets red in the face and then suddenly the air is drawn into the lungs with a high pitched, crowing sound called "child crowing." The attack may occur frequently during the day. Death rarely occurs.

Treatment.—Examine the gums carefully and if swollen and hot they should be lanced. Also examine the tonsils and back part of the throat for adenoids and if found they should be removed.

When the attack comes on carry the child to the window where it will have plenty of air and where you can see better. Throw a few drops of cold water in the face and put your finger far back in the child's throat. Unless it frightens the child you may sponge the breast with cold water. In severe cases the child should be placed in a warm bath two or three times a day and the back and chest thoroughly sponged with cold water. This may be employed when the child is having an attack unless it frightens the child. If the attack is very severe and the child is blue in the face it is much better to dash cold water in the face. Give easily digested foods and keep the children out doors a great deal. Besides the kinds of laryngitis here treated there is tuberculous laryngitis and syphilitic laryngitis.

ACUTE BRONCHITIS.

Description.—This is an acute inflammation of the bronchial tubes. It is a very common disease and rarely serious in healthy adults but very fatal in the old and young. It affects both the larger and medium-sized

breathing tubes and when it affects the small air passages it is known as capillary bronchitis or broncho-pneumonia. Capillary bronchitis and also chronic bronchitis will be treated later. As before said, the simple acute bronchitis is an inflammation of the larger and medium-sized air passages.

Causes.—Bronchitis is the result of taking cold and often is nothing more than an ordinary cold which extends down into the air passages and is known as a cold on the chest. Changeable weather of early spring and late autumn is a cause. It may prevail as an epidemic. It frequently occurs at the beginning of typhoid and malarial fevers. It is present in asthma and whooping cough and persons with spinal curvature are especially liable to it. Also, those who lead an indoor life, and especially men, are subject to it.

Symptoms.—In the beginning there are the symptoms of an ordinary cold and the hoarseness in some cases is marked. Sometimes the patient has a chill, feels languid, and has heavy pains in the bones and back. There is a feeling of tightness and rawness beneath the breast bone and a pressing on the chest. In mild cases there is not much fever. The cough is rough at first and comes in paroxysms which rack and distress the patient. During the severe spells the pain may be very severe beneath the breast bone and along the attachment of the diaphragm. At first the cough is dry with scanty and sticky expectoration or spit, but soon it becomes abundant and full of matter. Great relief is felt when the cough is loosened. In this form of bronchitis the breathing is not much increased unless there is high fever but when the smaller tubes are affected it is more rapid and difficult. When the cough is loose there is much rattling under the breast bone. By the end of a week in strong adults the fever subsides and the cough loosens. The patient is generally fully recovered in from a week to ten days. In young children the chief danger is that the bronchitis will extend downward. In measles and whooping cough the ordinary bronchitis is very likely to descend to the smaller tubes or passages and they then have broncho-pneumonia.

TREATMENT.—

Preventive.—Avoid taking cold and especially during measles, scarlet fever, typhoid fever, whooping cough and similar diseases.

Emergency Remedy or "What to Do."—In mild cases household remedies and treatments answer the purpose. Apply hot fomentations of hops and vinegar, a jacket poultice or a mustard plaster. Give a hot foot bath. Take a warm bath and drink hot lemonade or hot teas. If there is a feeling of much rawness keep the air saturated with moisture such as steam from a teakettle. If the cough is dry and irritating give $2\frac{1}{2}$ grains of Dover's powders every 3 or 4 hours until 10 grains have been taken. This is the dose for adults.

Caution or "What Not to Do."—Do not let the patient take more cold and see that the disease does not go down into the smaller air passages and result in broncho-pneumonia. Do not let the bowels become constipated.

Allopathic Treatment.—In the early stages give a combination of $\frac{1}{2}$ teaspoonful of syrup of ipecac and 1 to 2 teaspoonfuls of solution of citrate of potash, every 3 or 4 hours. For the cough in children from 1 to 3 years old give the following mixture: paregoric, 1 dram; syrup of ipecac, 30 drops and syrup of tolu, 2 ounces. Take a teaspoonful of this mixture every 3 hours. In acute bronchitis of children, if there is difficult breathing and the color becomes dusky from inability to raise the mucus, give 1 tablespoonful

of ipecac wine as an emetic. For an adult, if the cough is excessive give $\frac{1}{4}$ grain of codein or 20 drops of paregoric at a dose.

Homeopathic Treatment.—Put 10 to 15 drops of the second dilution of Aconite into half a glass of water and give two teaspoonfuls every $\frac{1}{2}$ to 3 hours according to the condition and age. This is good at the beginning of the attack when there is fever.

Put 10 or 15 drops of the third dilution of Belladonna into a glass half full of water and give 2 teaspoonfuls every $\frac{1}{2}$ to 3 hours. This is to follow Aconite and is for the tight, tickling and dry cough.

Prepare the second dilution of Bryonia in the same way as the Aconite and give 2 teaspoonfuls every 1 to 3 hours. This is for a tight cough that hurts and causes the child to cry when it coughs and when it is moved.

Prepare the third dilution of Phosphorus the same as the Aconite and give 2 teaspoonfuls every 1 to 3 hours. This is for a tight cough with a great feeling of pressing and tightness under the breast bone; also when the cough is worse from speaking.

Give 1 tablet of the third trituration of Hepar Sulphur every 1 to 3 hours. This is to be used when there is a loose rattling cough.

Nursing.—A mustard plaster may be applied to the chest and back or they may be rubbed with ammonia or chloroform liniment. For children apply to the chest a mixture of 1 ounce of oil of amber and 2 tablespoonfuls of sweet oil. Steam the room by the aid of a teakettle which is kept constantly boiling or put unslaked lime in a tub of water. Or, you may use the croup or bronchitis tent as described in the "Nursing Department." If necessary, add to the hot water from 1 to 2 grains of menthol every 2 or 3 hours. In other cases the irritation will be greatly soothed by pouring into the boiling kettle a tablespoonful of a mixture composed of equal parts of compound tincture of benzoin, oil of eucalyptus, and oil of pine. After the cough is looser administer the following: chloride of ammonia, $1\frac{1}{2}$ to 3 drams; and fluid extract of licorice and water, each 2 ounces. For an adult give a teaspoonful every 4 to 5 hours.

If it is simple bronchitis or cold on the chest the thing to do first is to get the patient into a sweat. This will reduce whatever fever there may be and also loosen the cough. Sweating can be produced by giving a hot foot bath just before going to bed and by placing hot water bottles in the bed far enough from the patient not to burn him. Drink plenty of hot drinks such as hot lemonade, hot ginger or hop tea and in fact almost any kind of hot tea will do. At the same time you can apply to the chest cloths wrung out of hot water in which hops and vinegar have been boiled. Of course this must be done in a warm room and the water from the applications must not be allowed to drip or run upon other parts of the body. A good bath under the bed clothes will do much good after the sweating. After this change the sheets and put on a clean night dress.

PEOPLE'S HOME REMEDIES.—(Also see Home Remedies for colds, pleurisy, pneumonia and asthma.)

1. **Pleurisy Root.**—For bronchitis, pleurisy and pneumonia in the first stages warm tea made of pleurisy root will produce sweating. Give a teaspoonful every hour or two.

2. **Skunk Cabbage.**—Give a teaspoonful of the tincture of skunk cabbage 4 times a day for bronchitis and asthma.

3. **Colt's Foot.**—For coughs, asthma and bronchitis boil an ounce of

the leaves of colt's foot in a pint of water. The dose is from 1 to 2 ounces 3 or 4 times a day.

4. **Crawley Root or Beech Drops.**—Crawley root or beech drops is splendid to cause sweating. The dose is from 20 to 30 grains of the powdered root given in hot water and repeated every hour or two.

5. **Herb Tea.**—Make a tea with white snake root, blood root and pleurisy root. The dose is from $\frac{1}{2}$ to 2 ounces.

6. **Herb Teas, Sugar and Lemon Juice.**—Give some mild cathartic and for the cough give boneset or pennyroyal tea and some sugar and lemon juice.

Physician's Remark.—Boneset and pennyroyal produce sweating and sugar and lemon juice loosen the cough and lessen irritation.

7. **Lemon Juice, Sweet Spirits of Nitre, Olive Oil and Honey.**—For the cough of bronchitis give an adult a teaspoonful of the following mixture 3 or 4 times a day. Mix 1 ounce each of lemon juice, sweet spirits of nitre, olive oil and honey.

Physician's Remark.—Lemon juice and honey are good for the cough. The nitre works on the kidneys and the castor oil on the bowels and casts off waste material.

8. **Catnip or Horehound Tea.**—Let the patient breathe the steam from hot catnip or horehound tea.

Physician's Remark.—Steam is soothing to the inflamed surfaces and so also are the fumes of catnip and horehound and the horehound is also an expectorant.

9. **Petroleum.**—For either simple or chronic bronchitis take a teaspoonful of petroleum before each meal.

10. **Antiphlogistine.**—Apply an antiphlogistine poultice.

CHRONIC BRONCHITIS.

Description.—This is a chronic inflammation of the bronchial tubes. It may follow repeated attacks of acute bronchitis but generally comes in chronic lung troubles, gout or kidney disease. It comes frequently in old age.

Symptoms in Old Age.—There is shortness of the breath and the cough is changeable with the seasons. A person may remain free from it during the summer, but each winter it comes on severely and persistently. There may be only a coughing spell in the morning or the chief distress may be at night. Sometimes the expectoration or matter spit up is large in quantity and sometimes small and is not very thick. In many cases it is incurable and the patient improves in the summer but the cough disappears only to return again during the winter months.

TREATMENT.—Often a change of climate is good. Southern France, Southern Florida or Southern California are recommended. For the morning or general cough you can take the following in the morning. Add 15 grains of soda, 5 grains of salt and 5 drops of chloroform to an equal quantity of warm water. For the cough drink freely of balm of Gilead buds tinctured in spirits. Three times a day you can take from 1 to 2 ounces of a tea made of seneca snake root. A tea made of elecampane can be used in the same way. Or, take 1 pound of spikenard, 1 pound of elecampane, 1 pound of comfrey, 1 pound of leaves and flowers of horehound, 1 pound of wild cherry bark and 4 ounces of blood root. Grind, mix and make a tea. Dose: 1 to 2 ounces 3 times a day.

Homeopathic Treatment.—Put 10 to 15 drops of the third dilution of Phosphorus into half a glass of water and give 2 teaspoonfuls every 4 hours. This is to be taken when there is a tight cough.

Give a tablet of the third trituration of Tartar Emetic 4 times a day. This is for a loose cough where the mucus is hard to raise.

CAPILLARY BRONCHITIS.

Broncho-Pneumonia.

Description.—This is the usual type of bronchitis or pneumonia before the fifth year. It comes mostly during the winter months when there are epidemics of influenza, etc. It is an inflammation of the small air passages.

Symptoms.—There is a cough and short breathing. The disease sets in suddenly with a chill or a convulsion followed by fever. This is when it does not follow other diseases. The fever rises rapidly and continues. This kind is not so severe as when it follows another disease such as measles or whooping cough. In these diseases if the fever gets high, with cough, rapid pulse and rapid breathing and a rattling sound is heard, we are likely to have capillary bronchitis. The onset is not sudden. Usually the child after a day or so gets feverish and begins to cough and has shortness of breath. The fever is from 102 to 104 degrees and variable; the skin is dry; the cough is hard and distressing and may be painful and the breathing is hard. The number of respirations or breaths may run from 60 to 80 per minute. In the acute simple form or where the disease does not follow another the outlook is good but in cases weakened by constitutional disease and prolonged fever it is terribly fatal. In connection with measles or whooping cough recovery may take place in the most desperate cases. Broncho-pneumonia is not so dangerous in children as in very old people.

TREATMENT.—

Emergency Remedy or "What to Do."—Cause sweating in one of the many ways described.

Caution or "What Not to Do."—Do not let the child take cold. Do not use a poultice or cotton jacket.

Internal Medicines.—For a child 1 to 2 years old give 2 or 3 grains of carbonate of ammonia in syrup of acacia and water. Use this every 3 to 4 hours if a short stimulant is required. For a constant stimulant give 5-year-old brandy well diluted with water. A child a year old may take 30 drops every 2 or 3 hours.

External Medicines.—Rub the child's back, sides, chest and abdomen with a teaspoonful of turpentine added to 3 teaspoonfuls of sweet oil. Do not use a poultice or cotton jacket. If the fever is very high, so as to be dangerous, control it with cool or tepid spongings with gentle rubbing. If symptoms of brain trouble develop put cool cloths to the forehead or an ice bag to the head. This is a very dangerous disease with old people.

Nursing.—It is always well in any disease in which there is inflammation to get the patient to sweating at the beginning of the attack. This draws the blood from the internal organs thus relieving the congestion. It makes the skin red, warm and moist thus getting rid of the chill or chilly feeling. It is well to do this in laryngitis, acute bronchitis, acute pleurisy, pneumonia and la grippe. If there is a decided chill or much chilliness use the "Corn Sweat" as described in the "Nursing Department." A rubber hot water bottle is good when placed at the parts that are painful. Hot teas are

good for an adult. Another way to cause sweating is to put hot water into fruit cans and place at the feet, knees, hips and sides.

Put the child into a well-ventilated and sunshiny room with the temperature at about 70 degrees. Heat if possible by a stove or open fire. If the house is heated with a furnace and is too dry have the air from the furnace flue pass over a pan of water and if the air is very hot and thoroughly dry it is better to set free in the air of the room a certain amount of steam from a tea kettle, a pan of boiling water or by occasionally dropping a piece of quicklime into a bucket of water. Dusty, dry and impure air is very injurious to the bronchial mucous membrane in cases of this disease. In many cases it is better to place the patient in a bronchitis or croup tent as described in the "Nursing Department."

Give nourishing but easily digested food in small quantities every two hours. Give no medicine in the food or near the time of feeding. Give milk, broths or albumen. (For "People's Home Remedies" see some of those given under Acute Bronchitis, etc.)

PNEUMONIA.

Inflammation of the Lungs—Lung Fever.

Description.—This is an inflammation of the air cells of the lungs. Often there is also inflammation of the small air tubes (capillary bronchitis) and there may also be inflammation of the pleura.

Causes.—The frequency of the disease is marked before the sixth year, then diminishes until the fifteenth year and then increases again. It is more frequent in males than in females. Weakness and alcoholism render a person more liable to it. The disease can follow an injury (traumatic pneumonia) or it can come from lying long in one position (hypostatic pneumonia). It comes more in the winter and spring months.

Symptoms.—Cough, short breathing, dilated nostrils and pain are characteristic of the disease. Much moving of the nostrils when breathing and accompanied with a single red cheek indicate pneumonia. The onset is short and sudden. It generally sets in with a chill lasting from fifteen to thirty minutes and perhaps longer. It is constant and severe and one may be taken in the sleep or at work. Fever has then already begun and there is headache and general pains. Within a few hours pain, often of an agonizing character, develops in the side. A short, dry painful cough begins and the breathing is more rapid. When seen on the second or third day the patient lies flat in bed, often on the affected side, and the face is flushed and particularly on one or both cheeks. The breathing is hurried and often accompanied with a grunt. The nostrils dilate with each drawing in of the breath. There are often sores on the lips and nose. The eyes are bright, the expression anxious, and the cough short and frequent and the coughing makes the patient wince and hold his sides. The expectoration, or matter spit up, is sticky and tinged with blood. The temperature is 104 or 105 degrees and the pulse is full and bounding. These symptoms run on for from seven to ten days and then the crisis comes. The temperature falls and the patient is comparatively comfortable. This time of crisis is variable and comes suddenly. The temperature may go below the normal (98-6/10). With the crisis there is much sweating and the patient falls into a comfortable sleep. This is the record for favorable cases. Pneumonia is the most fatal of all acute diseases, more so than diphtheria and consumption. Under one year

it is more fatal than between two and five. At about the age of sixty years the death rate amounts to sixty or eighty per cent. It is more fatal in the negro than in the white man.

In an unfavorable case of course all the symptoms become more severe. There is then more lung surface involved, sometimes the whole lung, and it sometimes extends to both lungs and is then called double pneumonia. Breathing becomes more difficult, the mucus is hard to raise and sometimes the patient is unable to raise it at all. There is a rattling sound made by breathing, the face is dark, there is a cold sweat and the patient is anxious looking and finally gets drowsy. If the disease lasts a long time pus sometimes forms on the lung and it must then be taken away before there will be any improvement.

TREATMENT.—Some give *veratrum viride*. The dose of the tincture is from 2 to 5 drops for an adult. It should be given every 2 hours for the first 24 hours.

For the Heart.—For adults give 5 drops or more of *digitalis*. To older children give 2 drops and younger children rarely need more than $\frac{1}{2}$ drop every 2 to 3 hours. Give this to children when the pulse is as high as 150 or 160. If the pulse rate is reduced after giving tincture of *digitalis* its use should be discontinued before the pulse drops below 100 per minute.

For the pain.—In adults the stitch in the side is best relieved by a hypodermic injection of $\frac{1}{4}$ grain of morphine. After the disease has fairly set in the pain is not as a rule very distressing except when the patient coughs and for this Dover's powder may be used in 5-grain doses according to the patient's needs, say every 4 or 6 hours. Hot poultices are better for children. Never use morphine for children. Use *paregoric*. Four drops every 2 to 3 hours for children under 2 years will be sufficient for the pain and cough. For older children and adults codeine may be used. For adults give $\frac{1}{4}$ grain. For children give $\frac{1}{24}$ to $\frac{1}{20}$ of a grain several times daily.

Empty the bowels daily with an injection or with salts. For children use a cotton or woolen jacket. In the early stages when the pain is present very hot poultices with mustard dressing and repeated every hour give more relief than the cotton jacket but when the first acute stage is over the jacket maintains an equal temperature.

At the beginning of the disease a tea made of horehound and boneset and sweetened with honey is good. Slippery elm tea is also good. It should be strained and may be drank freely.

Mix 1 dram of quinine and 2 ounces of lard and rub well into the skin. Regular rubbing twice a day is very good to reduce fever and is preferable even to a jacket. Can use it without jacket dressing.

Allopathic Treatment.—Dr. Osler claims that pneumonia is a self-limited disease and that you cannot shorten it; hence, give waiting treatment.

Homeopathic Treatment.—Put 10 to 15 drops of the second dilution of Aconite into half a glass of water and give 2 teaspoonfuls every 1 to 3 hours. This is good during the first 24 hours when the skin is hot and dry.

Give the second dilution of *Bryonia*. Prepare and give in the same way as the Aconite. This is good for sharp, stitching and shooting pains and when it hurts to breathe. This can be alternated with the Aconite every hour.

Give the third dilution of Phosphorus. Prepare and give the same as the Aconite. This is for a tight cough with bloody, rusty sputum.

Give the third trituration of Tarter Emetic. Give 1 tablet every 1 to 3 hours. This is to be used when there is a loose cough, a loose rattling breathing and the patient is unable to raise the mucus.

Nursing and Diet.—If one is very chilly or has a chill and the lungs feel full and sore and if it is hard to breathe and move and there is a sense of oppression over one side of the chest and perhaps some pain, you can then do nothing better than to take a good sweat. Hot fomentations may be used or hot water bottles may be placed around the body and especially to the feet and hips. At the same time drink large quantities of hot lemonade or hot teas such as horehound, ginger, hop or catnip. If the chill is very severe take the "Corn Sweat" as described in the "Nursing Department."

A married lady living in town was taken sick with "grip" and pneumonia followed. The patient improved steadily and was doing nicely. The husband was a good-natured soul but was careless and allowed the fire to go out. The patient had a terrible chill as a consequence. They sent for me but I was in the country at the time (it was Sunday forenoon, I remember). My wife went over to see if she could be of help and saw at once that a sweat was what was needed and so she applied the "Corn Sweat" as I have described in the "Nursing Department." When I reached home in the afternoon I immediately went to see the patient and found her doing nicely. I said a few plain things to the husband about carelessness and then I went home to dinner. Husband and wife both gave my wife credit for saving the patient's life. She at least saved her days of distress and pain by the prompt application of this effective remedy to produce sweating which was necessary in this case and this is just the means I would have taken had I been there myself.

Rubbing the chest with camphorated oil or camphor and lard is good. A mustard plaster is good but is likely to make the parts sore. A flaxseed poultice is good when put on and kept hot. Hops may be steeped, put into a bag and applied hot as can be borne. Put a dry flannel over such applications so that the surrounding parts do not get wet and chilled. Some people cannot bear moist heat. For them place sticks of stove wood in the oven until very hot, wrap each piece with a cloth and place several of these sticks about the patient. This will cause sweating and stop the chill or chilly feeling and the aching of the bones. At the same time you are using this treatment apply a hot salt-bag to the sore lung or other sore parts. An onion poultice is good but is better for bronchitis and laryngitis.

Do not put much clothing on the patient. Let him wear a light flannel jacket open in front. Have the room bright, sunshiny and well aired. Have only one or two persons in the room. Carefully sponge the patient each day with warm water even when the temperature is not too high. This is to be done carefully and gently. Keep the teeth, mouth and gums clean. Plain water or lemonade should be given freely. This also applies to bronchitis, pleurisy and laryngitis. When the patient is delirious give water at fixed times, every fifteen minutes or longer. Watch the tongue and lips to see if the patient is thirsty.

The food should be liquid, chiefly milk, either alone or, better, mixed with food prepared from some one of the cereals. Eggs, either soft boiled or raw, may also be given.

PEOPLE'S HOME REMEDIES.—(Also see some of the home remedies under colds, bronchitis, pleurisy, etc.)

1. **Herb Teas, Etc.**—Have the patient sit for perhaps half an hour with his feet and legs in warm water and drink sage or pennyroyal tea. Put some bitter herbs such as tansy, horehound, boneset, hops, smartweed and peach leaves into a vessel and boil. A handful of each herb may be used. Strip the patient, throw a blanket over his shoulders so that it comes to the floor about him and place the vessel under him, thus steaming the whole body. To keep the water steaming occasionally put in a hot brick. Continue this for half an hour, wipe the patient off quickly and put him to bed. Then give warm teas such as sage, pennyroyal or boneset and surround him with hot bricks. Keep him well covered and let him sweat for several hours. Then wipe him dry, put on dry clothes and allow him to sleep. If there is pain in the chest, after giving a purgative place a poultice of tansy, hops and wormwood over the chest as hot as can be borne. Change this every hour or two.

2. **Onions, Rye Meal and Vinegar.**—According to their size, take from 6 to 10 onions, chop fine and put into a large spider or skillet over a hot fire and add the same quantity of rye meal, and vinegar enough to form a thick paste. Stir it thoroughly and let simmer 5 or 10 minutes. Put into a cotton bag large enough to cover the lungs and apply to the chest of the patient as hot as can be borne. When this gets cool apply another. Continue re-heating the poultice as 3 or 4 applications may be necessary. The remedy should be applied until sweat starts freely from the chest. A lady in Akron, Ohio, says she can recommend this as being a most excellent treatment for this too often fatal malady.

3. **Cotton Seed Meal, Tobacco, Etc.**—Stir cotton seed meal into boiling water until thick enough to spread, stir a little tobacco in, or, in severe cases steep hops or smartweed before thickening. Apply the poultice over the lungs quite warm. When wishing to replace it with a fresh one let the fresh one follow by rolling it on as the old one is rolled off never letting the cold air strike the patient. When the poultice is removed cover with flannel or absorbent cotton.

BLEEDING FROM THE LUNGS.

Haemoptysis.

Cause.—Bleeding from the lungs is caused by the rupture of a blood vessel of the lungs.

Symptoms.—The patient spits blood or perhaps the blood runs from the mouth in a stream. Blood from the lungs is likely to be frothy because it is mixed with the air and it is generally of a bright red color while blood coming from the stomach is generally of a darker color.

Treatment.—Have the patient lie down and remain quiet. Place ice, or cloths wrung out of cold water, to the chest and to the back of the neck. To quiet him, if much frightened, give a hypodermic injection of $\frac{1}{8}$ grain of morphine. Another remedy is to give 10 grains of bromide of potash. This may be repeated, 15 minutes between doses, until 3 doses have been taken.

PEOPLE'S HOME REMEDIES.—

1. **Table Salt.**—Place the patient on a bed keeping the head and shoul-

ders raised. Keep him quiet, allow plenty of fresh air and give a teaspoonful or two of common table salt.

Physician's Remark.—Salt acts as an astringent and contracts the blood vessels and thus aids in stopping the bleeding. This is a simple home remedy one always has on hand and should be remembered in case of emergency.

2. **Ice and Alum.**—Hold pieces of ice in the mouth swallowing it slowly as it melts. Alum used in the same way is also an effective remedy.

Physician's Remark.—Alum is an astringent and aids in stopping bleeding in the same way as the salt does.

3. **Witch Hazel.**—Give some diluted witch hazel every 15 minutes until the bleeding stops.

Physician's Remark.—This is better to stop bleeding after a tooth has been extracted or to stop bleeding from small wounds.

4. **Salt and Vinegar.**—Raise the shoulders by the use of pillows, if the patient breathes easier that way, and keep him quiet. Sponge the chest with cold water and vinegar and give half a teaspoonful of dry salt. Continue giving small doses of salt if necessary as we have known it alone to save a number of lives where a doctor was not within reach.

Physician's Remark.—This is a sensible treatment as it combines the instructions for keeping quiet, sponging with cold water and giving salt. Any of these are good alone and the three together are better.

5. **Tying with Cord.**—Tie a cord about each thigh and about each arm above the elbow and bleeding from the lungs will stop almost instantly.

Physician's Remark.—This is also a good treatment for a person who has fainted.

PLEURISY.

Inflammation of the Pleura.

Description.—This is an inflammation of the serous membrane lining the cavity in which the lungs are situated and covering the lungs themselves. As this membrane lines the chest and also covers the lungs, there are two serous surfaces touching each other and when one surface is inflamed the other is likely to be also. Pleurisy is very painful. The pleura is likely to be inflamed in pneumonia and then we are said to have pleuropneumonia.

Symptoms.—There is a sharp, stitching pain and short, catchy breathing. The disease may set in with a chill, followed by fever and a severe stitching pain in the side. This pain is terribly distressing and is usually referred to the nipples or toward the arm pit. It can be felt low down in the back. It is a sharp, stitching pain and is made worse by breathing and coughing. The fever is not very high but is higher on the affected side than on the sound side. The temperature may drop to normal at the end of a week or ten days. The coughing is an early symptom but is not so distressing as in pneumonia. There is not much expectoration (spitting). In some cases there is left what is called "water in the chest" (hydrothorax). Sometimes the chest must be tapped and this water drawn off. There is sometimes pus in the chest after an acute attack of pleurisy and this is called purulent pleurisy. This sometimes follows other diseases and especially scarlet fever. This purulent pleurisy or empyema is met with under the following conditions:

(a) As a result of sero-fibrinous pleurisy.

(b) It is common as a secondary inflammation in various infectious diseases, among which scarlet fever takes first place.

(c) It may result from local causes like fracture of the ribs, penetrating wounds, malignant disease of the lungs and gullet, and perhaps most frequently of all, the perforation of the pleura by pus from tuberculous cavities. This pus may break through into the gullet, peritoneum, pericardium, or the stomach or even go down farther into the lower abdomen, or belly. This should always be looked for and especially if the original lung disease continues for a long time.

TREATMENT.—For purulent pleurisy there must be an operation for the removal of the pus so that the treatment here given applies more particularly to the dry or acute pleurisy.

Allopathic Treatment.—Small doses of either tincture of aconite or veratrum viride are good in the early stages. Of either of these medicines the dose for adults is 1 drop every half hour until the patient is slightly sick at the stomach or until the skin becomes moist. Then stop. At first you may give calomel or epsom salts. One fourth grain of calomel is usually given every half hour until the bowels move. This is then followed with epsom salts if it is thought best to have the bowels move more freely.

Allow rest and a liquid diet and for adults give Dover's powder at night.

If necessary for the pain a hypodermic injection of $\frac{1}{4}$ grain of morphine may be given to adults. A mustard plaster may be applied locally. For the pain in children small doses of codeine may be given. The dose is $\frac{1}{25}$ of a grain.

Homeopathic Treatment.—Put 15 drops of the second dilution of Aconite into half a glass of water and into another half glass of water put 15 drops of the second dilution of Byronia. Alternate these two medicines giving two teaspoonfuls every half hour or every hour until the pain is relieved.

Nursing and Diet.—Either leeches or adhesive plaster may be applied. Of course if the adhesive plaster is applied you cannot apply the leeches. In case you sweat the patient the plaster should be applied afterward for the plaster will be loosened if applied before sweating. Take strips of adhesive plaster 2 inches wide and when applied they should be lapped an inch each time. Begin at the backbone and bring the plaster around horizontally to the sternum or breastbone. Do not follow the ribs but bring the plaster around straight from the backbone to the breastbone. Apply from below upward and with enough pressure to prevent almost any movement of the wall of the chest on that side. Do not do this to children as their ribs are softer and bend too much. This treatment is also fine for broken or cracked ribs.

Keep the patient warm and at rest. Hot drinks are good as they cause sweating and bring the blood to the surface, thus relieving the congested pleura. Cover the affected side with cotton sprinkled over with camphorated oil or camphor and lard. Or, you can put on a jacket poultice. Of course you cannot do these things if you have applied the adhesive plaster.

If there is pus in the chest it must be removed by a surgeon and this also applies when there is water in the chest, if the water is not absorbed by treatment.

Warm fomentations of hops or oats are good. Teas made of either Indian turnip or pleurisy root are also good. Give $\frac{1}{2}$ ounce of the tea every 1 to 2 hours. To promote expectoration (spitting) you may give a tea

made from comfrey, marshmallow or skunk cabbage. These teas should be sweetened with honey and sharpened with vinegar.

In the first stages of pleurisy the treatment given for the first stages of pneumonia will apply. Get the patient warm and in a good sweat. For this purpose you may use hot teas, a hot foot bath, hot fomentations or the application of dry heat. To apply dry heat you can use small pieces of stove wood heated in the oven and wrapped in cloth or a hot salt or sand bag or perhaps hot flatirons. Every one has bottles about the house. These may be filled with hot water, wrapped and placed near the patient. These will soon remove the chill. Get the patient to feeling warm and afterwards moist and sweaty. It is always a good plan after a sweat to bathe the patient under the clothes, using a sponge or cloth and tepid or warm water. Bathe but a small space and then dry before bathing more. After the bath, dry bed clothes and a clean dry night dress should be put on.

A lady whom I was attending had a severe attack of pleurisy. After making two or three visits and finding that she was not getting along as I wished, I made an examination and found she was very "bilious" and in consequence the skin was very yellow. I decided that this was the reason the medicines did not act well for the organs were dormant and not active as they should be.

I told the nurse (an old experienced lady) to give the patient the "Corn Sweat" as I have described it in the "Nursing Department." The nurse told me that to cause sweating she frequently baked sticks of stove wood and placed them about the patient but I told her that in this case I wanted moist heat and so the patient was given the "Corn Sweat."

I saw the nurse early the next morning and asked about the patient and if she had had a good sweat. The nurse replied that the patient had sweated very freely and was better and then added: "but you ought to have seen her night dress. It was all green caused by the throwing off of the bile and poisons." The patient improved rapidly and this was but one instance out of many where the "Corn Sweat" has saved several trips of the doctor to say nothing of the pain and suffering. The "Corn Sweat" if used in time will save many doctor bills.

PEOPLE'S HOME REMEDIES.—(Also see "People's Home Remedies" for pneumonia, bronchitis, etc.)

1. **Pleurisy Root.**—Make a tea of pleurisy root and give half a teacupful every hour or two. This will promote sweating.

2. **Snake Root, Pleurisy Root and Blood Root.**—A tea made of white snake root in combination with pleurisy root and blood root is good for lung troubles. Give from $\frac{1}{2}$ an ounce to 4 ounces of the tea at a dose very 3 or 4 hours.

3. **Boneset Tea.**—At the beginning of pleurisy give boneset tea. Give from 1 to 4 ounces of the warm tea several times a day.

4. **Crawley Root.**—This is splendid for sweating purposes. Give from 20 to 30 grains of the powdered root in hot water and repeat every hour or two.

5. **Pleurisy Root and Crawley Root.**—Mix equal parts of powdered pleurisy root and powdered crawley root and give 20 grains in water as hot as the patient can drink. Repeat every hour or two. This will produce sweating.

6. **Snake Root, Etc.**—Keep the patient sweating gently by giving half

a teaspoonful of compound tincture of Virginia snake root every two or three hours. If there is a bad cough frequently give a small dose of tea made from two parts each of pleurisy root and wild cherry root and one part of blood root.

7. **Poke Root, Blood Root, May Apple Root, Etc.**—If the pleurisy is chronic apply a plaster to the chest made in the following way. Add a little wine to equal parts of beeswax and burgundy pitch. Melt these together and stir in a little poke root, blood root and may apple root. Spread some of this on a piece of cotton and apply warm. Leave it on the chest for a week or longer.

8. **Compound Syrup of Horseradish.**—For coughs and colds the Compound Syrup of Horseradish will be found excellent and may be used for the coughing in pleurisy, pneumonia and grip. Take 4 tablespoonfuls of grated fresh horseradish, 2 tablespoonfuls of boneset leaves and tops, 1 tablespoonful of Canada snake root, 2 pounds of sugar and a sufficient quantity of boiling water and weak vinegar. Steep the boneset and snake root in $\frac{1}{2}$ pint of boiling water and press well, adding boiling water to it until $\frac{1}{2}$ pint of tea is obtained; then add the sugar and dissolve by slow heat. Add the horseradish to $\frac{1}{2}$ pint of diluted vinegar; let stand for 2 days and then press, adding more diluted vinegar to the mass until $\frac{1}{2}$ pint of solution is obtained. Add this to the syrup and shake until all the sugar is dissolved. Give from 1 to 4 teaspoonfuls every 2 or 3 hours.

ASTHMA.

Bronchial Asthma.

Causes.—This disease sometimes runs in families and especially in families having irritable nervous systems. It may also follow other diseases. It is more frequent with men than with women. Change of location causes it to come and go. Odors may bring on an attack as also may the breathing of air filled with dust.

Symptoms.—The attack usually comes on at night. The patient struggles to breathe and has a sense of tightness across the chest and a wheezy cough which is hard at first and then softer and followed by raising a little mucus, causing the patient to feel easier. The patient is compelled to sit up in bed or go to the window to breathe and wheeze. It may run for several hours and it may last for days. It gets better gradually and the patient speaks and coughs more easily. There may be the same train of symptoms for several evenings. He may not suffer again for some time but the attacks are likely to return unless a cure is effected.

TREATMENT.—

Preventive.—The old saying that “an ounce of prevention is worth a pound of cure” applies in the treatment of asthma, so I will first give a preventive for this disease. It is also a cure for individual attacks.

Asthma Tincture.—Take $\frac{1}{2}$ pound of quick lime and “slack” it by turning on 2 quarts of hot water and while it is “slacking” and boiling stir in 2 teaspoonfuls of tar, mix well and let settle. Take $\frac{1}{2}$ pound of wild or Indian turnip, $\frac{1}{2}$ pound of fresh milkweed, and a small handful of lobelia leaves, and bruise and steep these in 2 quarts of wine at a sand heat for 24 hours; then press and strain and add the lime water and bottle at once. Dose—a wine-glassful 3 times a day for asthma. This asthma tincture is also good for coughs, hysterics, spasms and consumption.

For use in the intervals between the attacks of asthma I will give another prescription. Take $\frac{1}{4}$ pound of liverwort, $\frac{1}{4}$ pound of Solomon's seal, $\frac{1}{4}$ pound of skunk cabbage, $\frac{1}{4}$ pound of horehound and 2 ounces of blood root. Bruise these together, add water, boil until the strength is extracted, strain and then boil down to 4 quarts and strain again. To this add 5 pounds of honey and $\frac{1}{2}$ pint of brandy and allow it to settle. Take a wine-glassful 3 or 4 times a day. Put a strengthening plaster on the chest.

If there is difficult breathing take $\frac{1}{2}$ ounce each of blood root, lobelia and pleurisy root; bruise all and add 1 quart of wine. Take a tablespoonful occasionally.

Allopathic Treatment.—For relief when threatened with asthma inhale nitrite of amyl for a few minutes. Smoke some of the powders used for this disease. A person with a strong heart can take tincture of lobelia. Give from $\frac{1}{2}$ to 1 teaspoonful at one dose and then repeat in 10-drop doses every $\frac{1}{2}$ hour to 1 hour until circulation is depressed and the skin is moist and perspiring. This may make the patient sick at the stomach and cause him to vomit but to do any good this medicine must be used in these doses.

Fluid extract of ipecac is also good. Give from 1 to 5 drops every 10 or 15 minutes until sick at the stomach. Tincture of skunk cabbage may be taken in teaspoonful doses 3 times a day. Another remedy is the powdered root of the Indian turnip. Take 10 grains 3 times a day.

Homeopathic Treatment.—Give $\frac{1}{100}$ of a grain of Tactar Emetic every $\frac{1}{2}$ hour until the patient feels a little sick at the stomach. For a child use the third trituration of the same medicine. Give 1 tablet every half hour until relieved.

Nursing and Diet.—Be careful of the diet and also about taking cold. Be on the outlook for other diseases. Examine the rectum and other openings and also the tonsils to see if they are all right. Also examine for heart disease. A patient who is subject to asthma should always have on hand some nitrite of amyl. When an attack comes on break one of the capsules into a handkerchief and inhale the odor for a few minutes.

When the patient lives in a dry furnace-heated house it is well to put him into a bronchitis tent as described in the "Nursing Department." Steam kettles which are manufactured for the treatment of this disease are also good. You can put cotton saturated with the medicine into the receptacle for it and the steam from the water will go through the cotton and relieve the patient. The steam coming from the spout of this little kettle is not very hot and you can generally put your open mouth over the spout. If it is too hot you can make a roll with some writing paper and put one end over the spout while you inhale the steam from the other end. You must get the steam into the bronchial tubes. Here is a good soothing medicine to put upon the absorbent cotton. Take equal parts of tincture of benzoin, oil of eucalyptus and oil of tar; put a tablespoonful of this mixture upon the cotton and put into the receptacle prepared for it. Then light the alcohol lamp, fill the water basin half full of water and the saturated steam will soon appear. This little kettle can be purchased for about \$1.50.

PEOPLE'S HOME REMEDIES.—

1. **General Treatment.**—Protect the chest with warm clothing. Do not sleep on, or handle, beds or pillows made either of feathers or straw but use a corn husk mattress and a husk or air pillow. Do not use straw matting in the house or straw under the carpets. There seems to be small par-

ticles flying from matting and straw that irritate the air passages. Use every precaution against taking cold. Discard corsets and do not wear low necked dresses. Never sit down or lie down with damp feet. Keep the feet warm and the nerves quiet. Some relief may be obtained by burning or smoking a little saltpeter paper in the room. Prepare the paper in the following way and keep it on hand for use. Dissolve a tablespoonful of saltpeter in a teacupful of water. Pour this over some strips of brown paper placed in a plate and let it stand for a few hours, then dry the papers in the sun and save for use. When needed burn one of these papers in the room and breathe the smoke.

Physician's Remark.—The lady sending the above must have had experience with asthma for she gives some good practical advice.

2. **Alum and Molasses.**—An excellent remedy is to take a teaspoonful of powdered alum mixed with a little molasses every 15 minutes until it causes vomiting.

3. **Mustard Poullice.**—Relief is often obtained by applying a strong mustard poullice over the stomach and chest.

Physician's Remark.—Mustard irritates, causing the tubes to dilate and thus aids the breathing.

4. **Tobacco or Stramonium Leaves.**—In some cases the smoking of either tobacco or stramonium leaves gives a great deal of relief.

Physician's Remark.—The fumes enter the bronchial tubes and act directly upon them and smoking these herbs is therefore better than taking them as medicine.

5. **Saltpeter.**—For spasmodic asthma soak a sheet of unglazed paper in a solution of saltpeter for 15 or 20 minutes, then fold and dry it in an oven. When an attack comes on light one end of the paper allowing it to burn so that the patient may inhale the fumes.

Physician's Remark.—A few drops of tincture of benzoin sprinkled upon the paper makes it more effective. Saltpeter paper and stramonium leaves when smoked and the fumes inhaled often relieve attacks of asthma.

6. **Lobelia Tea.**—Steep an ounce of dry lobelia leaves in a pint of water and give a tablespoonful every 15 minutes until it produces vomiting. The tincture of lobelia is also used. The dose is from 15 to 60 drops.

7. **Mullein Leaves and Saltpeter.**—Soak some dried mullein leaves in a solution of saltpeter and water, dry and put aside till needed. When required, burn one of these leaves and inhale the smoke.

Physician's Remark.—The smoking of mullein leaves alone is considered by many to be a good remedy for asthma and others have found the saltpeter to be good. Then why should not the two together be a good combination?

8. **Vinegar, Turpentine and Egg.**—Take a cupful of vinegar; add a wineglassful of turpentine and 1 egg; beat together and use as a liniment on the chest.

Physician's Remark.—This produces counter irritation.

9. **Poplar Bark Tea.**—Take a tea made by steeping white poplar bark in water. The dose is half a wineglassful.

DISEASES OF THE HEART, ARTERIES AND VEINS.

(Diseases of the Organs of Circulation.)

Description of the Heart and Valves.—The heart is a hollow muscular organ somewhat the shape of a cone and it is located between the right and left lungs. It is placed obliquely in the chest, with the broad end or base directed upward, backward and to the right, and lies between points on a line with the 5th and 8th dorsal vertebræ. The point, or apex, of the heart is downward, forward and to the left and corresponds to the space between the cartilages of the 5th and 6th ribs, $\frac{3}{4}$ of an inch to the inner side and $1\frac{1}{2}$ inches below the left nipple or about $3\frac{1}{2}$ inches from the middle line of the breast bone (sternum). The base or large end of the heart is placed behind the breast bone and extends farther into the left than into the right half of the cavity of the chest. About one-third of the heart lies to the right and $\frac{2}{3}$ to the left of the middle of the breast bone. It lies behind the middle portion of both breast bone and the costal cartilages of the 3rd, 4th, 5th and 6th ribs of both sides. In a grown person the heart measures about 5 inches in length, $3\frac{1}{2}$ inches in breadth at its broadest part and $2\frac{1}{2}$ inches thick.

The heart is divided into right and left sides by a muscular wall (septum) which runs lengthwise of the heart. The right side is called the right or pulmonary heart and the left side is called the left or systemic heart. The right side is called the pulmonary heart because it sends the blood to the lungs and the left side is called the systemic heart because it sends the blood all through the system. Another wall or constriction in the heart divides each half into an upper and lower cavity. The two upper cavities are called auricles and the two lower cavities are called ventricles. We thus have a right and a left auricle and a right and a left ventricle. The auricles occupy the base or large end of the heart. The right side of the heart contains venous or impure blood and the left side contains arterial or pure blood.

Plan of Circulation.—From the general system the venous or impure blood enters the right auricle and from there it goes down into the right ventricle through an opening guarded by the tricuspid valves and it leaves the right ventricle through an opening guarded by the pulmonary semilunar valves. From the heart the impure blood is carried by the pulmonary artery to the lungs to be purified. It circulates through the lungs and gives off its impurities and takes in fresh oxygen from the air. The pulmonary vein brings the blood from the lungs, after being purified, back to the heart. It first enters the left auricle and then goes through an opening, guarded by the mitral valve, down into the left ventricle. The blood is forced from the left ventricle through an opening guarded by the aortic semilunar valves. It is carried from the heart by the aorta artery and this divides and subdivides into many smaller arteries so that the blood reaches every part of the body and gives up its oxygen to the various parts and takes in the impurities. It

is then collected by the veins and carried back to the heart and thus it continues making its tour of the body as long as we live.

We have spoken of a number of valves in the heart. If these valves become weakened or diseased they cannot entirely close the openings of the heart and part of the blood flows back each time with a gurgling sound called regurgitation.

EMERGENCY REMEDIES OR WHAT TO DO IN CASE OF HEART FAILURE.

Persons having heart disease should always keep certain remedies on hand to be used in case of emergency. We will mention several of these remedies and tell how they should be used and the members of the household should become familiar with them and their uses.

Nitrite of amyl perles should always be at hand and one who has heart trouble should always carry some of these capsules with him. Break one into a handkerchief and inhale the fumes for a few minutes when you feel a fainting attack coming on.

Buy some tablets containing $1/60$ of a grain of strychnine and when an attack comes on give one of these tablets and if necessary repeat in from $1/2$ hour to 1 hour if no other medicine like digitalis has been given. Never give more than the two doses and never give but one dose if other heart medicines have been given. Strychnine is good when there is a weak and faint feeling caused by over exertion, anger, etc.

Also keep a one or two-ounce bottle of digitalis within reach. You can give 5 drops and repeat the dose in 10 minutes and again in half an hour if necessary. If it works well the patient can breathe easier and if necessary it may then be taken 4 times a day for the next two days. Digitalis may be given also when but one of the strychnine tablets above have been given. Do not give more than one dose of the strychnine if you use digitalis, brandy or whiskey.

Besides these remedies there should also be at hand some spirits of camphor or ammonia to smell of and some brandy or whiskey for a stimulant and for palpitation caused by stomach trouble. For gas on the stomach which distresses the heart it is well to keep some baking soda, ginger or peppermint at hand.

In case of emergency you can then give the patient the amyl, camphor or ammonia to smell of and also give either strychnine or the digitalis or if these are not at hand you can give either the whiskey, brandy, ginger, peppermint or soda according to the case. If the patient can breathe easily he should be laid flat but if the breathing is difficult he should be propped up in bed with plenty of pillows to support him. See that the arms and legs have proper support. Remember that the patient must have plenty of fresh air but that it should be warm as patients suffering from an attack of heart trouble feel the cold intensely. Avoid all sudden movements and noises that would startle the patient.

Nursing and Diet.—A person with heart trouble should be kept in a comfortable position. This is sometimes difficult to do owing to dropsy and difficult breathing which causes bodily distress and restlessness. If it is difficult for the patient to breathe he should be kept propped up in bed or in an easy chair with plenty of pillows to provide rest for the arms. Avoid movements and noises that will startle the patient. Admit plenty of warm fresh air.

The diet must be carefully regulated. There is always a tendency toward flatulence, or wind in the stomach and bowels, in heart disease. Foods such as starch and sugar tend to increase this gas and should be avoided. But little liquid should be given when there is dropsy. A milk diet is best during any heart disease and is often improved by giving the whites of eggs, etc., in it. Be careful to keep the bowels regular and the kidneys working freely. The stomach should not be overloaded and the patient should not eat any food that disagrees with him or that produces gas. The gas will press upon the heart by distending the stomach and cause much distress. The patient should not take stimulants and especially alcohol. The bowels must be kept open by laxatives if necessary. If the kidneys do not act freely make a tea of digitalis which is commonly known as foxglove and give from 1 to 4 teaspoonfuls every 3 or 4 hours for a few days. The tincture of digitalis should not be given without directions from the doctor unless it is an emergency case.

A person who is affected with disease of the heart should lead a life free from excitement, worry, grief and trouble. He should never hurry and should never run or over-do in any way. The heart must not be overworked.

When one having heart trouble has a bad spell or suffers from an attack of shortness of breath with difficult and distressing breathing and the pulse is irregular and either weak or fast, you can give 5 drops of digitalis in a little water. This may be repeated in 10 minutes and again in half an hour if necessary. Two hours later you can give another dose and for the next two days it may be given four times a day if necessary but should not be continued longer.

If a person with heart disease is taken with a weak faint attack and is unable to sit up and must lie down, a tablet containing 1/60 of a grain of strychnine would be a good thing to give. The patient should also smell of camphor or ammonia or amyl. Hot brandy or whiskey is good in such cases and especially if the spell is caused by a bad stomach. The liquor causes the gas to come up and this relieves the patient. Remember that any one who feels faint should lie down with his head low if he can breathe in that position. The clothes round the neck and waist should be loosened and fresh air must be admitted to the room.

Ginger, peppermint and soda are also good for the gas on the stomach, but soda must be used with caution when there is organic heart trouble. It will relieve the gas in a few moments but right at first it is likely to distend the stomach and if the heart is in a very bad condition it might be dangerous by causing more pressure on the heart.

PEOPLE'S HOME REMEDIES FOR PALPITATION OF THE HEART.

1. **Tincture of Ginger.**—Take half a teaspoonful of tincture of ginger every hour.

2. **Baking Soda.**—Drink half a glass of water with a teaspoonful of soda dissolved in it.

3. **Table Salt.**—If it is caused by the stomach and comes on upon lying down at night, eat a little table salt. The lady sending this recipe advises that the patient lie on the back or right side and says that a very small lump of salt has given her many a night's sleep.

4. **Magnesia, Charcoal, Brandy and Cayenne Pepper.**—If there is a sour stomach take magnesia or prepared charcoal. Also put a little cayenne pepper into some brandy and give that.

Physician's Remark.—If stomach trouble is the cause this treatment will help that and consequently relieve the heart trouble.

5. **Breathing.**—Persons who are subject to palpitation should abstain from coffee, tea, tobacco and liquors. When an attack comes on the patient should lie upon the back and draw in full breaths of air to fill the lungs.

Physician's Remark.—This is good advice to follow in this trouble.

COMPENSATION AND FAILURE OF COMPENSATION.

The heart has a certain reserve force by which it can for a time do more work than it is usually called upon to perform, and which, when any part of the heart becomes diseased, often allows of its adjusting itself to the new conditions thus warding off the ill effects of the disease. This reserve force is called "compensation." A person may have heart disease for years without knowing it or being inconvenienced by it beyond an occasional shortness of breath when climbing or walking quickly. If, for any reason, the heart ceases to adjust itself to the conditions forced upon it by disease, there is said to be "failure of compensation."

ENLARGEMENT OF THE HEART—DILATATION.

Dilatation of the heart means enlargement of the cavities of the heart. Dilatation is frequently one of the means by which the heart adjusts itself to the extra work forced upon it by disease. Hypertrophy is an enlargement of the heart due to an increased thickness, total or partial, in the muscular walls of the heart. It is the principal factor in compensation. It sometimes causes headache, roaring in the ears, flushing of the face and "heart pain." Dilatation is an increase in size of one or more chambers or cavities of the heart either with or without thickening of the muscular walls. Generally enlargement of the cavities and of the walls of the heart go together. The enlargement may affect the entire heart, one side, or only one chamber. As the ventricles do the chief work in forcing the blood through the arteries it is natural that the change or enlargement is most frequently found in them.

Symptoms.—There is a sense of fullness and discomfort, rarely amounting to pain, about the heart. This may be very noticeable when the patient is lying on his left side. There may be palpitation, headaches, flushes in the face, noises in the ears and there may be flashes. A physical examination shows a weak and enlarged heart. The heart sounds are not normal. The pulse is small, weak, quick and often irregular.

TREATMENT.—

You must treat the disease that causes it. Look after the kidneys and toxic (poison) diseases such as typhoid fever, scarlet fever, etc.

NEUROSIS.

Description.—This is a nervous affection of the heart in which there is no real heart disease.

Causes.—It occurs most frequently in connection with hysteria, distention of the stomach and anemia and as the result of the over use of tobacco or stimulants.

Symptoms.—The symptoms occur only in paroxysms. There is violent, rapid and often irregular heart action, heart pain, difficulty in breathing and a feeling of suffocation.

TREATMENT.—

Stop the use of tobacco and alcohol if that be the cause. Treat the anemia, hysteria or other disease that causes it.

FATTY HEART.

This is often caused by over-eating, a lazy inactive life, lack of exercise and too much drinking of liquors.

REGURGITATION.

This is flowing back of the blood due to improper or insufficient closing of the valves of the heart. It is most commonly the result of endocarditis. Treat the cause.

STENOSIS.

This is due to the thickening of the valve and the obstruction of the blood flow. If the mitral valve is affected it is called mitral stenosis and if the aortic valve is affected it is called aortic stenosis.

BREAST PANG—ANGINA PECTORIS.

The real angina pectoris is a rare disease. It is really but a symptom going with hardening of the root of the aorta and changes in the coronary arteries and with other diseased conditions of the heart.

Symptoms.—It is marked by paroxysms of agonizing pain in the region of the heart and extending into the neck and arms. In violent attacks there is a sensation of impending death.

Treatment.—A doctor must always be called for violent heart pain. The patient should lead a quiet life. During the attack inhale nitrite of amyl. Break one of the perles or capsules containing from 2 to 5 drops upon the handkerchief and inhale. If this fails to give relief in a few minutes the patient should take a few breaths of chloroform. If the pain continues take a hypodermic injection of $\frac{1}{4}$ grain of morphine. Smell of camphor or ammonia. Always keep the feet warm. Do not over exercise when affected with any heart trouble. Let the bicycle alone, do not run for cars or trains and do not hurry in any way.

PERICARDITIS.

Description.—The pericardium is a membrane or sac surrounding the heart. Pericarditis is inflammation of this membrane.

Causes.—It usually develops from other diseases such as rheumatism, Bright's disease, diphtheria, etc.

Symptoms.—There is fever, distress, tenderness and sometimes pain at the heart and radiating from it. There is a rapid, feeble and irregular pulse. There is anxiety, sickness at the stomach and vomiting and in some cases there is a short hacking cough. Toward the end there is pallor, coldness, a livid face and swelling of the face and extremities. The sac sometimes fills with water.

Treatment.—Apply the ice bag and observe absolute quiet. Aconite and digitalis may do some good but it is doubtful. The diet should be light, dry and nutritious for there is often an accumulation of water before the disease has lasted long. Use blisters for the water. Treat symptoms as they arise.

ENDOCARDITIS. (Acute, Malignant and Chronic.)

This is an inflammation of the membrane lining the inside of the heart. It is usually confined to the valves and it occurs in two or three forms. The simple or acute kind is characterized by growths on the valves or membrane and with loss of substance in the valve tissues. The chronic kind is a slow hardening change resulting in thickening, puckering and deformity. The simple or acute kind is usually found with some other affection. It is frequently associated with acute articular (joint) rheumatism and tonsilitis may be complicated with it. It is not uncommon in scarlet fever but is rare in measles, chicken-pox, diphtheria, small-pox and typhoid fever. In pneumonia all kinds are common. The acute simple kind is very frequent in fatal cases of St. Vitus's dance or chorea. Endocarditis is met with also in cancer, gout, diabetes and simple acute Bright's disease.

Symptoms of Acute Kind.—The symptoms are not very characteristic. In acute rheumatism the heart beats faster and is slightly irregular and the fever increases without more joint trouble. There is sometimes difficulty in breathing. You must always watch the heart in acute rheumatism.

Malignant endocarditis is usually secondary to some other disease and is really an intensified acute endocarditis.

Acute endocarditis frequently runs into chronic endocarditis. The hardening (sclerosis) may be primary but is often secondary to acute endocarditis. The hardening leads to deformity of the valves and is the foundation for chronic valvular heart disease. Alcohol, syphilis and gout appear to be capable of causing this hardening. Another cause is the strain of prolonged and heavy muscular exertion like heavy lifting. This disease may cause hardening of the aortic valves in young people and middle aged men.

CHRONIC VALVULAR HEART DISEASE.

Description.—This is due to a diseased condition of the valves. The hardening causes weak valves or stenosis. This weakness of the valves and stenosis (narrowing) may exist alone or together. This narrowing partially hinders the normal outflow of blood and the weakness of the valves permits the blood current to take a wrong course and part of the blood flows backward. In either narrowing or weakness the effect is dilatation or enlargement of a cavity of the heart. In stenosis, or narrowing, the result is an increase in the difficulty which the chamber has in expelling the blood through the narrow opening. If there is insufficiency or weakness of the valve the result is the over filling of a chamber of the heart by blood coming into it from an improper source, for instance, in mitral insufficiency or weakness, of the mitral valve between the left ventricle and left auricle, the blood flows into the left auricle from the pulmonary vein as it should do but the blood also flows into it from the left ventricle and stretches the walls of the auricle, causing dilatation and finally enlargement. This flowing back of the blood is most commonly caused by weakness in the valves but may be caused by an abnormally large orifice or opening so that the valve does not entirely close it. This trouble is more frequent in males and affects chiefly able bodied vigorous men of middle age.

Symptoms.—Headache, dizziness, flashes of light and a feeling of faintness on rising quickly are among the earliest symptoms. Palpitation and heart distress are common on slight exertion. The pain may be dull, aching

and confined to the heart region but more frequently it is sharp and radiating and is felt up the neck and down the arms and particularly the inside of the left arm. Attacks of true breast pang are more frequent in this than in any other valvular disease. As the disease progresses there is shortness of breath and swelling of the feet. The patient must sit up in a chair to sleep. The attacks are likely to come on at night.

AORTIC STENOSIS.

Aortic stenosis, or narrowing, is not nearly as common as insufficiency or weakness.

Symptoms.—The early symptoms are due to a defective blood supply to the brain causing dizziness and fainting. There is palpitation and pain about the heart and also breast pain. These symptoms are not so marked as when there is weakness or insufficiency.

MITRAL VALVE INCOMPETENCY.

This weakness or insufficiency of the mitral valve ensues:

(a) From changes in the valve segments whereby they are contracted and shortened, usually combined with changes in the tendinous cords inside the ventricle or with more or less narrowing of the orifice or opening.

(b) As a result of changes in the muscular walls of the ventricle; either dilatation, so that the valve segments fail to close an enlarged opening, or changes in the muscular substance so that the segments are imperfectly contracted during the systole or contraction of the heart. The common causes producing insufficiency are endocarditis which causes a gradual thickening at the edges of the valves, contraction of the tendinous cords, and union of the edges of the segments. These segments are parts that make up the valve. In the majority of cases there is not only weakness or insufficiency but some narrowing, or stenosis, as well.

Symptoms.—These may come on gradually and the patient may not be aware that he has heart trouble on account of perfect compensation or adjustment of the heart to the conditions. He may perhaps experience a little shortness of breath on exertion or on going up stairs. It is only when the heart has not adjusted itself to the changed conditions or fails to continue to do so that the patient begins to be troubled.

While the compensation is still good, and before the appearance of any marked symptoms, patients with extreme incompetency often have a congested appearance of the face and the lips and ears have a bluish tint. In long standing cases, particularly in children, the ends of the fingers may be larger and there is shortness of breath on exertion. The patients have a tendency toward attacks of bronchitis or bleeding from the lungs because of the congested condition.

Sooner or later comes a period of disturbed or broken compensation in which the most intense symptoms are those of venous engorgements (congestion in the veins). There is palpitation, a weak irregular heart and signs of dilatation. Hard difficult breathing is a prominent feature and there may be coughing. A distressing symptom is the heart "sleep start," in which, just as the patient falls asleep, he wakes gasping and feeling as if his heart was stopping. There is usually a slight blueness and even a yellow tint to the skin. There may be coughing with bloody or watery expectoration

(spitting). There may also be dropsy beginning in the feet. On putting the ear over the heart there is heard a blowing sound which is loudest at the point of the heart.

MITRAL STENOSIS.

Description.—This is a narrowing of the mitral opening.

Causes.—This is usually the result of valvular endocarditis occurring in the earlier years of life and very rarely one is born with it. It is very much more common in men than in women. Rheumatism is more common with boys than with girls and it is well known that endocarditis of the mitral valve is more common in rheumatism. Anemia and chlorosis occur oftener in girls, however, and these sometimes produce endocarditis.

Symptoms.—In children the lower part of the breast bone and 5th and 6th left costal cartilages are often prominent owing to enlargement of the right ventricle. In auscultation (listening with the ear and instrument), at the inner side of the point of the heart there is usually heard a rough or purring sound. This is characteristic only when compensation is maintained. Finally, upon failure of compensation, other sharp sounds are heard. Following the failure of compensation are rapid and irregular action of the heart, shortness of breath, coughing and signs of lung engorgement, etc. Perhaps a majority of cases of mitral stenosis are not attended with dropsy.

TRICUSPID VALVE DISEASE.

Occasionally this results from acute or chronic endocarditis with puckering. More commonly the condition is one of relative insufficiency or weakness and is secondary to lesions of the valves on the left side and particularly of the mitral valve. It is also met with in all conditions of the lungs which cause obstructed circulation, such as hardening and emphysema and particularly in combination with chronic bronchitis.

TRICUSPID STENOSIS.

Stenosis means "narrowing." This may be congenital or acquired.

Symptoms.—Blueness of the lips and face is a very common symptom and in the late stages, when dropsy comes on, it is likely to be intense.

PULMONARY VALVE DISEASE.

Murmurs in this region are extremely common but lesions of the valves are exceedingly rare. Pulmonary stenosis is almost invariably congenital, that is, the patient is born with it. The signs are very uncertain.

PULMONARY INSUFFICIENCY.

This is very rare.

GENERAL TREATMENT OF HEART DISEASE.

The treatment must be directed to the conditions and symptoms such as dropsy, etc. The patient should live an equable life and maintain an even temper and in the dangerous conditions should observe absolute rest. Anger, excitement, rush, hurry and overdoing are very dangerous. Avoid going up and down stairs and doing any work that requires placing or

holding the arms higher than the head. Persons afflicted with heart trouble should always keep proper medicines on hand both for regular taking and for emergencies. (See Emergency Treatment.)

ARTERIO SCLEROSIS.

In this disease the blood vessels become weaker, crooked and more likely to break or rupture.

Causes.—It is caused by age and intemperance in eating and drinking. Mental and physical over exertion, syphilis and gout are other causes.

Treatment.—There is very little you can do for it except to keep the patient in good condition. Do not over exert.

ANEURISM.

This is a local dilatation of an artery and is due to the weakening of the wall or coat of the artery so that it is unable to stand the pressure of the blood. The coats of the blood vessel are thinned and one of the coats may be worn through. There is a lump in the artery and a purring sound may be heard upon putting the ear to it.

Treatment.—Rest and a quiet life and an operation if possible.

VARICOSE VEINS.

Varix.

Description.—By this is meant an enlarged, crooked and knotty condition of the veins. In general use this term is usually applied to the veins of the extremities and particularly to those of the legs. The disease begins by a slow dilatation or enlargement of the vein which gradually becomes thickened and crooked. It generally affects only the veins near the surface.

Causes.—(a) It occurs more frequently in females than in males and often follows enlargement of the womb from any cause. (b) The tendency toward varicose veins increases with advanced age. (c) It may be caused by obstructing the flow of the blood in the veins. Tight garters or other tight clothing may thus cause it. (d) Occupations which require much standing may be the cause. (e) It is also due to tumors of the pelvis, pregnancy and diseases of the heart and lungs.

Treatment.—Apply a local elastic bandage or a perfectly fitting silk elastic stocking. Sometimes an operation is necessary and part of the vein is removed. Remove the causes and attend to the bowels, liver, heart and lung conditions. Observe quiet and keep off the feet as much as possible.

PEOPLE'S HOME REMEDIES.—

1. **Alum Water, Lead Water or White Oak Tea.**—For varicose veins bathe the affected parts with alum water, lead water or a tea made from white oak bark.

2. **Plantain and Burdock Leaves.**—Bruise some plantain and burdock leaves and bind upon the affected parts.

Physician's Remarks.—All the ingredients contained in the two remedies above are good because of their astringent qualities.

3. **Alcohol.**—For varicose veins, bathing the parts freely with cold water or dilute alcohol will be found beneficial at the commencement of the trouble. After they have become knotted or painful a laced stocking should be worn.

DISEASES OF THE BLOOD.

(Including diseases of the ductless glands.)

ANEMIA.

In anemia the blood lacks the normal quantity of red cells or of hemoglobin in the cells.

Following we will treat Chlorosis or Primary Anemia, Secondary Anemia and Pernicious Anemia.

GREEN SICKNESS—CHLOROSIS.

Primary or Essential Anemia.

This is a condition of the blood usually met with in young girls. It is characterized by the small quantity of hemoglobin and red cells in the blood.

Symptoms.—There is a peculiar pallor of the skin which often has a greenish hue. This is why it is called "green sickness." The patient is nearly, if not always, plump and possessed of a good quantity of fat. The patient may be ruddy looking and the disease is then called "Chlorosis Florida." Difficult breathing, palpitation of the heart, dizziness and perhaps attacks of partial fainting are some of the symptoms. There is always constipation. The patient is gloomy and dull.

Treatment.—The treatment is somewhat similar to the treatment of the secondary form of anemia. Pay particular attention to the bowels and keep them open. Larger doses of iron are needed than for the secondary form but the iron is likely to be constipating.

SECONDARY ANEMIA.

Causes.—Most cases of anemia belong to this class and are due to loss of blood or one of the infectious diseases. Sometimes it comes from breathing foul air and factory girls and stenographers frequently are affected. Overwork and insufficient and improper food are also causes.

Symptoms.—There is marked paleness and the cheeks may have no color; or, they may have color and even then the patient may suffer from palpitation of the heart. Headache, neuralgia, loss of appetite, constipation and attacks of fainting are sometimes due to anemia and in women to amenorrhea or no monthly flow.

Treatment.—Remove the causes. Eat a proper diet and live a hygienic life with plenty of fresh air, sunshine and outdoor exercise. Iron and arsenic and sometimes bitter tonics are used. For the constipation give cascara sagrada and especially if iron is given for iron is constipating. Stimulate the appetite with drugs like nux vomica, quinine or other bitter tonics like cardamon or gentian. The following is a good prescription for this trouble. Take 5 grains of reduced iron, $\frac{1}{4}$ grain of arsenious acid and 5 grains of extract of nux vomica. Make this into 20 pills and take one after each meal. In some cases you can use 2 grains of quinine in place of the nux vomica. If the stomach is in poor condition dilute hydrochloric acid in 5-drop doses and pepsin in 5-grain doses or pancreatin and soda or taka-diastase in 2 or 3-grain

doses with the meals are advisable. Or, you can take the elixir taka-diastase in 1 to 2 teaspoonful doses.

PERNICIOUS ANEMIA.

This is very often a fatal malady.

Symptoms.—The symptoms are those of severe anemia. There is a lemon colored skin and thin blood which coagulates slowly. There is a tendency to bleeding into the skin and mucous membrane. In severe cases pus may form around the edges of the teeth.

LEUKEMIA.

(The Blood Sufferers.)

There are an extraordinary number of the white cells of the blood with alterations in the bone marrow.

Cause.—The cause is as yet unknown.

Treatment.—The treatment is not very satisfactory. Large doses of arsenic will delay the advance of the disease and may do some good. Give 5 drops of Fowler's solution of arsenic 3 times a day.

HEMOPHYLIA.

This is when the blood does not clot normally. The treatment is to build up the system with tonics.

PURPURA.

This is the escaping of small quantities of the blood into the skin.

Treatment.—Eat easily digested and nutritious food and remain in the sunshine all day. Give tonics such as iron, arsenic, gentian, quinine or columbo.

PEOPLE'S HOME REMEDIES FOR THE BLOOD.—Including Syrups, Herbs Remedies and Blood Purifiers.

1. **Cider, Yellow Dock and Horseradish.**—To 1 quart of hard cider add 1 ounce of yellow dock root and $\frac{1}{2}$ ounce of horseradish. Take a wine-glassful 4 times a day. This is one of the best blood purifiers known and saves you the dollar you would otherwise pay the druggist for a patent medicine as it can be made at home.

Physician's Remark.—Both the yellow dock and the horseradish are alteratives.

2. **Onions.**—Raw onions eaten either with or without vinegar are the best blood purifiers known. Then why pay a dollar a bottle for some patent medicine that does not have half the virtue of the onions.

3. **The Great German Blood Purifier.**—Take a double handful each of wild cherry bark and the roots of burdock, yellow dock and dandelion; put these into 2 quarts of water and boil down to a quart; strain, and sweeten with sugar if preferred. The dose is a tablespoonful before each meal. This is excellent to cleanse the blood when one has either boils or carbuncles. An equal quantity of nearly any good blood purifier would cost you two or three dollars at the drug store. Take these common herbs and make them up yourself and you will have a quart of the best blood medicine in the world and at no cost whatever save the time spent in preparing it.

Physician's Remark.—Burdock and yellow dock are alteratives; the former acts more on the kidneys and bowels and the latter on the blood. Wild cherry is more of a tonic and sedative.

4. **Sulphur, Molasses and Cream of Tartar.**—Sulphur and molasses with a little cream of tartar added is a fine blood remedy. Take three days and skip three days. The dose is a teaspoonful.

Physician's Remark.—Cream of tartar is a diuretic and acts on the kidneys and it is also a laxative and aids in casting off the impurities. Sulphur is an alternative and a laxative and thus cleanses the blood.

5. **Spikenard.**—Use small spikenard either in decoction or as a syrup. The dose is 1 to 2 ounces 3 or 4 times a day.

6. **Prickly Elder.**—Use the tincture of the prickly elder 3 or 4 times a day. Five drops is a dose.

7. **Burdock.**—Burdock is a good blood remedy. It may be used as a decoction or a syrup. Take $\frac{1}{2}$ pint three times a day. Burdock is better when in combination with other remedies.

8. **Turkey Corn for Syphilis and Scrofula.**—Make a tea by using 4 drams of the powdered bulb of turkey corn to a pint of water. The dose is from 1 to 4 ounces, 4 times a day. The dose of the tincture is from $\frac{1}{2}$ to 1 dram. This is good for syphilis and scrofula.

9. **Combination for Syphilis and Scrofula.**—For syphilis and scrofula combine blue flag with mandrake, poke root, black cohosh and prickly ash bark. The dose of the tincture is from 10 to 20 drops and of the powder from 5 to 10 grains, 3 or 4 times a day.

10. **Sheep Laurel for Syphilis.**—Sheep laurel is one of the best remedies for syphilis. The dose of the tincture of the leaves is from 5 to 10 drops every 2 to 4 hours.

11. **Yellow Dock.**—Yellow dock is good for scrofula, syphilis, etc. It may be used alone or in combination. The dose of the decoction is from 1 to 4 ounces, 4 times a day. The dose of the fluid extract is 1 teaspoonful 4 times a day.

12. **Queen's Root.**—Queen's root or stillingia, either alone or in combination with other remedies, is good for blood diseases and syphilis. The dose of the decoction is from $\frac{1}{2}$ to 1 ounce 3 times a day.

13. **Yellow Dock, Queen's Root and Bittersweet.**—Equal parts of yellow dock, queen's root and bittersweet, made into a syrup, is very good for scrofula, syphilis and other blood diseases.

14. **Syrup of Turkey Corn.**—(a) Take 2 pounds of coarsely bruised roots of turkey corn, 1 pound of twin leaf, 1 pound of blue flag root and $\frac{1}{2}$ pound of sheep laurel leaves. Mix these articles together, place all in a convenient vessel, cover them well with 76 per cent. alcohol and steep for three days. Then transfer the whole to a displacement apparatus (filter, etc.) and gradually add hot water until 2 pints and 4 fluid ounces of the alcoholic tincture have been obtained or filtered and then set aside.

(b) Continue the percolation of this second solution, reserve as much as contains a sensible amount of spirits and evaporate the alcohol from it.

(c) Continue the displacement by adding hot water until the solution obtained is almost tasteless and boil down this weaker infusion until, when added to the second solution after the evaporation of its alcohol, 13 $\frac{1}{2}$ pints will be left.

(d) To these 2 solutions combined add 18 pounds of granulated sugar dissolved by gentle heat, removing all scum carefully, and if it exceeds 15 pints and 12 ounces evaporate to that quantity with constant stirring. Then remove from the fire and when nearly cold add the solution first set aside,

thus making 18 pints of syrup. It may be flavored with essence of sassafras, wintergreen, etc. This is very good as an alterative syrup and is good for chronic syphilis, scrofula, liver troubles and rheumatism. If you wish you may add 1 ounce of iodide of potash for each pint of the syrup. The dose of the syrup is 1 teaspoonful, 3 or 4 times a day.

15. Compound Syrup of Stillingia or Queen's Root.—Take 2 pounds each of queen's root and root of turkey corn; 1 pound each of blue flag root, elder flowers and pipsissewa leaves; and $\frac{1}{2}$ pound each of coriander and prickly ash berries. Frequently 1 ounce of iodide of potash is added to each pint of syrup.

(a) Grind and mix all the articles, place all in a vessel and cover with 76 per cent. alcohol and macerate for 3 days. Then transfer to a displacement apparatus and gradually add hot water until 4 pints of the solution have been filtered, which retain and set aside.

(b) Continue the filtering with hot water and of this second solution reserve so much as contains a sensible amount of spirit and evaporate the alcohol.

(c) Continue the filtering with hot water until the solution obtained is almost tasteless and boil down until when the second solution is added it will make 24 pints.

(d) To these 2 solutions combined add 32 pounds of granulated sugar and dissolve by gentle heat. If it exceeds 28 pints evaporate to that amount with constant stirring. Then remove from the fire and when nearly cold add the 4 pints (first solution) and make 4 gallons of syrup. The dose is from 1 to 8 teaspoonfuls, 3 or 4 times a day. This is good in chronic diseases such as syphilis, scrofula, liver and glandular diseases. Usually the iodide of potash is added as previously mentioned. These formulas can be made into infusions or decoctions instead of syrups if desired. The herbs should then be steeped in boiling water but in such cases do not add the alcohol and sugar. The dose then would be from 1 to 4 ounces.

16. Compound Syrup of Sarsaparilla.—This is good for chronic liver trouble, rheumatism, syphilis, scrofula and skin diseases. If desired, you can add to it 1 ounce of iodide of potash to every pint. The dose is from 1 teaspoonful to 1 tablespoonful 3 or 4 times a day. Take 10 ounces each of the roots of Honduras sarsaparilla, roots of yellow dock, roots of burdock and roots of guaiacum wood and 8 ounces each of the bark of the root of sassafras, southern prickly ash, elder flowers and blue flag root.

(a) Grind, mix, place all in a convenient vessel, cover with 76 per cent. alcohol and macerate for two days. Then put this in a filter and gradually add hot water until 2 pints have been obtained which retain and set aside.

(b) Continue the filtering and of the second solution reserve as much as contains a sensible amount of spirit and evaporate the alcohol from it.

(c) Continue the filtering by adding hot water until the solution is almost tasteless and boil down this weaker solution until it begins to thicken or until when added to the balance remaining of the second portion it will make 12 pints.

(d) To these 2 solutions combined add 16 pounds of granulated sugar and dissolve by heat, carefully removing the scum. Evaporate if necessary to 10 pints, constantly stirring. Remove from the fire and when nearly cold add the first portion and make 2 gallons of the syrup. This may be flavored with wintergreen.

DISEASES OF THE SPLEEN.

Diseases of the spleen do not generally exist independently but come from other diseases. The spleen is swollen in typhoid fever, malaria, hardened liver, etc.

PEOPLE'S HOME REMEDIES.—

1. **Salt and Yolk of Egg.**—For chronic inflammation of the spleen apply over that organ a plaster made of salt and the yellow of an egg.

2. **Table Salt.**—For chronic inflammation of the spleen take 1 dram of common table salt 3 times a day.

3. **Wine and White Oak Bark.**—For “ague cake,” which is enlargement of the spleen, boil the inner bark of white ash in some white wine and take a wineglassful 3 times a day.

HODGKIN'S DISEASE.

Description.—In this disease there is a marked swelling and over-growth of the lymphatic glands, both internal and external.

Symptoms.—There is shortness of breath and palpitation. There are enlarged glands and a bronze skin. Enlarged masses of the glands in the neck and the groin are associated with puffiness of the face.

Treatment.—Give 5 drops of Fowler's solution of arsenic 3 times daily for a week.

GOITRE.

Bronchocele—Thyrocele.

The thyroid gland is on the front part of the neck. All enlargements of this gland are called goitres.

Treatment.—Apply compound tincture of iodine externally and internally give iodide of potash, 5 grains 4 times a day. Also give blood purifiers.

Personally I prescribe the compound tincture of iodine both externally and internally. Externally you must use enough to make the skin a little sore. Take 1 drop internally 4 times a day. It must sometimes be continued a long time both externally and internally.

PEOPLE'S HOME REMEDIES.—

1. **Iodine and Sweet Oil.**—A lady writes: “I removed a goitre by applying each night before retiring a mixture of two parts iodine and 1 part sweet oil. When the skin became tender I ceased application for a night or two then used as before. I know others who have used this remedy with equal success.”

2. **Iodine, Carbolic Acid and Glycerine.**—Put 4 ounces of the compound tincture of iodine into a large mouthed bottle and add $\frac{1}{2}$ dram of pure liquid carbolic acid and $\frac{3}{4}$ ounce of glycerine. Mix thoroughly and apply with a feather or a cloth once or twice a day as can be borne. A lady writes that two members of her family completely removed goitres with this remedy and that they never returned. This is a standard treatment recommended and used by many of our best physicians.

3. **Nettle Seed.**—Grind 15 or 16 of the seeds of common nettle into a powder and take daily. This will cure a goitre and not injure the health.

4. **Alum, Borax and Salt.**—Take equal parts of alum, borax and salt and water. Dissolve the other ingredients in the water and apply to the enlarged neck 3 times a day for 3 weeks.

5. **White Iodine.**—As soon as noticed rub with white iodine. Don't

stop in a week or a month but wash your neck as often as you wish and put it on. If the neck gets sore rest for a few days and then try again.

EXOPTHALMIC GOITRE.

Basedow's Disease—Grave's Disease—Parry's Disease.

Symptoms.—There is bulging of the eyeballs and palpitation of the heart with a very rapid pulse. There are fine tremors of the hands, arms and head and there is an enlarged neck.

Treatment.—The treatment is not very satisfactory. Treat the symptoms and make the patient comfortable. Give good nourishing food.

MYXEDEMA.

Extraordinary nutritional changes take place in the body as the result of the absence, atrophy (wasting), removal, or inactivity of the thyroid gland. Peculiar swelling of the subcutaneous tissue, falling of the hair, mental failure and feebleness of the circulation characterize it.

Treatment.—Give 2-grain capsules of the dried thyroid gland of the sheep. Give these 2 or 3 times daily and gradually increase until 10 or 15 grains are taken daily, if possible. If the extract of the thyroid gland is used, the dose is $\frac{1}{2}$ grain 3 times daily at first. Watch for weakness of the heart. Continue this for some time, but under the care of a good physician, and it may help.

CRETINISM.

The causes are nearly the same as those of myxedema.

Symptoms.—The symptoms rarely develop before the end of the second year. It may be noticeable when the child is 12 months old. The child is backward and mentally dull. The head, hands and feet may seem unduly large in proportion to the rest of the body. The face is stupid and heavy, the eyes dull, the lips coarse and the nose broad and flat. The lips are likely to protrude with considerable dribbling of saliva. The tongue is swollen, the legs are short and bent, the skin is sallow and greasy and the temperature is below normal.

Treatment.—Administer thyroid extract. Begin with $\frac{1}{4}$ grain 3 times a day and gradually increase. It must be carefully given and great change and good will result. This thyroid extract is from the thyroid gland of the sheep.

ADDISON'S DISEASE.

Disease of Supra-Renal Glands.

Symptoms.—There is general asthenia (weakness), the patient easily tires and there is a constant sense of fatigue. The patient does not get any good from rest and sleep. The heart sounds are lacking in tone, the pulse is soft, the extremities cold and the temperature below normal. There is a dark color or pigmentation of the skin. The skin is of a bronze color. It may be over the whole body but usually affects only the skin of the face and neck and the back surfaces of the hands and forearms. If the mucous membrane of the mouth is examined you will find the inner side of the lips are darkened and also the edges of the tongue, particularly below. It looks as though ink had been taken into the mouth.

Treatment.—This is very unsatisfactory. Treatment simply relieves it. Give good diet and strengthening remedies like iron and arsenic tonics.

SCURVY.

Scorbutus.

Causes.—This is due to the too long continued use of the same kind of food and unwholesome food. Sailors on long voyages are likely to get it.

Symptoms.—The gums are swollen and spongy, the teeth become loosened, the mouth becomes foul and there is swelling of the salivary glands.

Treatment.—Give good and varied food with plenty of oranges or lemons and green vegetables. Stay in the sunshine and fresh air. Arsenic and iron are given as medicines. Lime juice and pepsin are good for the indigestion. For the mouth use chlorate of potash and myrrh as given in treating stomatitis.

PEOPLE'S HOME REMEDIES.—

1. **Lemon Juice, Etc.**—An old sailor says that sweetened lemon juice taken freely will cure the worst case of scurvy. Lemon syrup and syrup of citric acid are also good. Take freely of a decoction made from sarsaparilla and sassafras with lemon juice added. To 3 quarts of water add 2 ounces each of field daisies and dandelion roots. Boil to a quart and take a teacupful every night and morning.

2. **Sage Tea and Alum.**—For the gums apply strong sage tea with a little alum in it.

DISEASES OF THE STOMACH AND INTESTINES.

Including All Abdominal Diseases.

INFLAMMATION OF THE STOMACH.

Acute Gastritis—Acute Gastric Catarrh.

Causes.—Cold and the eating of too many sweets are the causes in children. In older persons the cause is too much indigestible food or overloading the stomach. Drinking ice water or other cold drinks when perspiring is another cause and it may be produced by poisons.

Symptoms.—There is discomfort in the stomach and the fever is between 100 and 102 degrees. The bowels may be constipated or they may be a little loose. A thin white fur dotted by many tiny red spots covers the tongue. There is some pain and tenderness upon pressure around the stomach. Sickness at the stomach and vomiting may occur.

TREATMENT.—

Allopathic Treatment.—Give $\frac{1}{4}$ grain of calomel every $\frac{1}{2}$ hour for 8 doses and follow in 5 hours with a seidlitz powder. After this give 5 grains each of subnitrate of bismuth and oxalate of cerium. Give this every hour for 5 or 6 doses. For a child give 2 grains of the bismuth and 1 grain of the oxalate of cerium.

Homeopathic Treatment.—At the first when there is fever give the second dilution of Aconite. Put 10 or 15 drops into half a glass of water and take 2 teaspoonfuls every hour to 3 hours. For the indigestion take the third trituration of Nux Vomica. Take 1 tablet every hour. If there is much vomiting and thirst give the third trituration of Arsenicum. Take 1 tablet every hour or two. When the tongue is coated, thick, yellow and swollen you can give Mercurius Vivus, third trituration. Give one tablet every three hours. This may be alternated with the Arsenicum.

Nursing and Diet.—In acute gastritis the feeding is of importance. It is best to go as long as possible without eating a thing. The stomach is too sore to digest food. Soups and broths which are thin and not too rich, and diluted with milk are good. Plenty of hot water is generally good, also, and a mustard plaster over the region of the stomach helps.

PEOPLE'S HOME REMEDIES.—See Indigestion, Dyspepsia, and Stomach and Bowel Difficulties.

INDIGESTION AND DYSPEPSIA.

Chronic Gastritis—Chronic Catarrh of the Stomach.

Symptoms.—There is loss of appetite, an impaired sense of taste, nausea and perhaps vomiting in the morning. The food may be vomited up or the vomited material may be partly digested. There is belching of gas and the tongue is coated. The bowels are usually constipated and the digestion is slow and impaired.

TREATMENT.—Attention must be paid to the diet both as to food and drinks. Washing out the stomach is good. For the loss of appetite various simple bitters may be given.

Allopathic Treatment.—Cinchona, quassia and cardamon may be given. Once or twice a day with the meals you may give $\frac{1}{2}$ dram of compound tincture of cardamon.

Five drops of dilute hydrochloric acid combined with essence of pepsin may be given with each meal.

Homeopathic Treatment.—Third trituration of Nux Vomica, the third trituration of Pulsatilla, the third trituration of Carbo. Veg., the twelfth trituration of Lycopodium and the second dilution of Bryonia. (For doses see "Homeopathic Medicines" in Nursing Department.)

Nursing and Diet.—Eat often but small meals of easily digested foods. As a rule grease of every kind must be forbidden. Eat no fried foods. Eat slowly, chew the food well and do not eat too much. If there are water brashes and much gas, then starchy foods such as potatoes and the coarser vegetables should not be eaten. Hot bread, cakes, pancakes and pies are not good. Keep away from the soda fountain and do not eat sweets. Sweet milk and buttermilk are both good and so are broths and gruels if not too rich. Relieve the constipation. Taka-diastase relieves troubles arising from the eating of too much starchy food. Take a teaspoonful of the elixir of taka-diastase after each meal.

In indigestion what you eat is of prime importance. You cannot get rid of indigestion if you keep putting into the stomach the food or the drink that causes it. Whatever food disagrees with you, stop eating. Pies are generally harmful as well as most cakes. Milk disagrees with some people. Skimmed milk and buttermilk are good for some. Eggs should be either soft boiled or cooked for an hour with the shells on. If an egg is boiled for an hour it becomes tender and mealy. Meats are hard to digest. Potatoes are more healthful when baked or boiled but some cannot eat potatoes on account of their containing so much starch which forms gas on the stomach. Eat as little as possible and it will not hurt you to occasionally fast for a day. The bowels must move freely at least once a day. Many cases of indigestion are helped by free movements of the bowels. Remember, also, that it sometimes takes months to cure indigestion and it may return without much provocation. It is best to be careful of the diet for some time after you are cured.

Some good herb remedies for the stomach may be had by making teas of the following herbs. Put from 2 to 4 ounces of the herb into a pint of water and steep and then take 2 or 3 ounces of the tea 3 or 4 times a day. You can use golden seal, sweet flag, gentian, columbo, comfrey, poplar bark, balmony, bitter root, prickly ash bark, wild cherry bark or ginger root.

I was doctoring a rich jolly farmer for dyspepsia. He told me: "As long as the medicine lasts I feel good but the stomach trouble comes back when I stop the medicine." I asked him, "You are careful what you eat?" He replied, "Oh, yes, I am very careful." I was then very busy and did not inquire particularly as to what he ate but took his word as to his being careful. One day in the spring he came in for more medicine. We sat down and had a talk. I said, "You are still careful about what you eat?" "Oh yes," he replied, "I am careful about that." "Well tell me just what you eat," I said. He hesitated a moment and then said, "Why I guess I eat about everything that is put on the table." I found that he ate sausage and

sausage gravy, pancakes, pork and gravy, fried potatoes, fried eggs, cakes and mince pies as well as drinking two or three cups of coffee at a meal. We had a good laugh for this was certainly "being careful." How can anyone who eats such rich foods be cured of dyspepsia! These foods were just the cause of his stomach trouble and to cure a disease you must first remove the cause. It is the doctor's duty to tell people what to do and what not to do if they would prevent or cure disease. It is the patient's duty to follow instructions and all the medicine in the world won't keep us well if we are continually disobeying the laws of nature.

I remember, when I was still a boy at home on the old farm, a man who helped us butcher. I remember him particularly on account of the quantities of food which he ate. He was especially fond of sausage and would eat a piece of fresh sausage at least eighteen inches long at one meal and other food in about this proportion. In a few years he had a genuine case of dyspepsia and wondered how it was possible for him to have stomach trouble. I, myself, in those days, frequently went to bed after eating heartily of rich mince pie. Of course dyspepsia followed. I then knew no better but experience is an effective teacher.

PEOPLE'S HOME REMEDIES.—

(Also see Stomach and Bowel Difficulties.)

1. **Hard Boiled Eggs.**—Dyspepsia may be completely cured by living for several weeks upon nothing but hard boiled eggs. The eggs should be boiled not less than 30 minutes and an hour is better. If boiled this long they are not tough but are soft and mealy. At first the patient should eat the whites only and later the yolks may also be eaten. Eat absolutely nothing except the eggs and many cases will be cured though you may have to continue the treatment for several weeks or a month or two.

2. **Milk and Lime Water.**—Milk and lime water is a very effective remedy used by physicians. Put a few lumps of unslacked lime into a pint can and add water until it looks like thin cream. Let the lime settle and use the clear water at the top, being careful not to use any of the settlings. Six or eight teaspoonfuls of lime water may be added to a glass of milk.

3. **Soda and Ginger.**—Mix some soda and ginger in the proportion of 1 teaspoonful of soda to $\frac{1}{2}$ teaspoonful of ginger. Keep this in a tight box and take $\frac{1}{2}$ teaspoonful in a little water before eating if digestion is bad.

Physician's Remark.—Soda is good for the gas and relieves the distress while the ginger is stimulating.

4. **Chicken Gizzard Skin.**—Remove the inner lining of the gizzard; thoroughly clean and dry; then pulverize and mix with granulated sugar in the proportion of 1 teaspoonful of gizzard skin to $\frac{1}{2}$ cup of sugar. Dose— $\frac{1}{4}$ teaspoonful after meals or when needed. "This remedy was recommended to me about 10 years ago and I was so well satisfied with it that I always keep it in the house and whenever one of the family notices the first symptoms of indigestion he takes a dose or two as needed."

Remark.—This remedy comes from the family of one of the professors at Albion, Mich. The pepsin is the curative agent in the chicken gizzard.

5. **Hot Water.**—A lady writes that after suffering for years she was cured of indigestion by leaving off all other treatments and drinking a cupful of hot water immediately before retiring at night and upon rising in the morning.

Physician's Remark.—The water aids in the cure of dyspepsia by washing out the stomach.

6. **Pepsin.**—Take pepsin and leave off coffee, tea, tobacco and whiskey.

7. **Rhubarb, Baking Soda, Etc.**—Take powdered turkey rhubarb, 2 drams; baking soda, 48 grains; simple syrup, 1 ounce; and mint water, ½ pint. The dose is a tablespoonful three times a day before meals.

Physician's Remark.—The soda is good for the gas on the stomach and the rhubarb is laxative.

GASTRIC ULCER.

In the milder form this may exist for years without its presence being suspected.

Symptoms.—There is discomfort and pain after eating with constant gnawing when the stomach is empty. It is sometimes relieved by food and afterward the pain may increase. The pain radiates back to the shoulder blade and the spine. The stomach is sometimes very sore. Constipation is usually marked and the urine scanty. In bad cases there is hemorrhage or bleeding from the stomach.

TREATMENT.—Restrict the diet. Milk which has been predigested with peptonizing powder is good. The diet must be watched carefully for a long time.

When there is too much acidity mix an ounce each of baking soda, magnesia ponderosae and calcii carbonatii and 10 drops of ol. menth piperita. Take a large teaspoonful in half a glass of water when needed.

Homeopathic Treatment.—Third trituration of Arsenicum, third trituration of Kali. Bich. and Nitrate of Silver.

CANCER OF THE STOMACH.

This is one of the most common forms of malignant growth. It is most often situated at the lower (pyloric) end of the stomach.

Symptoms.—Pallor is well marked and there is loss of weight and strength. Stomach distress, dyspepsia, sickness at the stomach, vomiting, gnawing pain, and a pallid hue, when the patient is over 40 years of age, are symptoms. Other symptoms such as a lump in the stomach and tenderness, soreness, and pain should make one suspicious of a cancer in the stomach. Vomiting of blood looking like coffee grounds is another symptom. When a test meal is given and the contents of the stomach analyzed there is found to be almost or a total absence of hydrochloric acid and there is an abnormal amount of lactic acid. The duration is variable, sometimes lasting for months and longer.

Treatment.—Relieve the pain. If an operation is performed it should be done early. Operations sometimes prolong life comfortably for years.

NEURALGIA OF THE STOMACH.

Gastralgia.

Symptoms.—The paroxysm of pain is very violent and is felt not only in the region of the stomach but also along the edges of the ribs.

TREATMENT.—

Allopathic Treatment.—It can be relieved with 1 dram of spirits of chloroform mixed with 1 dram of compound spirits of lavender. From ½ to 1 grain of menthol is also good.

Homeopathic Treatment.—Take the third trituration of Atropine. Take 2 tablets every 15 minutes for 3 doses. If the pain is caused by gas give the third trituration of Carbo. Veg. The twelfth trituration of Lycopodium is also good.

PEOPLE'S HOME REMEDIES.—

1. **Fomentations of Tansy, Boneset and Hops—Mustard Poultice—Essence of Ginger.**—Empty the bowels with an injection of warm water. Place warm fomentations of tansy, boneset and hops over the stomach and follow with a mustard poultice. Give essence of ginger internally.

2. **Rhubarb and Baking Soda.**—Take 4 ounces of tincture of rhubarb and 2 drams of common baking soda; mix, and give from 2 teaspoonfuls to a tablespoonful as often as necessary. This mixture is improved by adding a few drops of tincture of cayenne.

3. **Brandy, Peppermint and Ginger.**—If caused by gas give hot brandy or strong peppermint or ginger water.

BLEEDING FROM STOMACH.

Hemorrhage.

(See “Accidents and Emergencies.”) Salt is good.

VOMITING.

Nausea—Sickness at Stomach.

This is only a symptom of disease.

Causes.—Vomiting is due to a variety of causes. It may be caused by improper food. If it is not caused by some acute disease it may be due to dyspepsia, torpid liver or constipation. Pregnancy is also a cause.

TREATMENT.—

Allopathic Treatment.—Make some pills of oxalate of cerium, and give one of these every 4 or 5 hours. This is good for vomiting during pregnancy. Arsenic is good to check vomiting when it is given in very small doses. One-tenth of a drop of ipecac is very good when there is much nausea or sickness of the stomach with the vomiting. Or, you can use the wine of ipecac in 1-drop doses every 15 minutes until relieved. In measuring the ipecac to get 1/10 of a drop you can put one drop into ten teaspoonfuls of water and then give one teaspoonful of the liquid and thus you get just 1/10 of a drop at a dose.

Homeopathic Treatment.—When there is a burning, watery vomiting give the third trituration of Arsenicum. Give 1 tablet every 15 minutes or half hour until the vomiting is checked.

PEOPLE'S HOME REMEDIES.—

1. **Peppermint, Ginger, Etc.**—A tea made of peppermint, spearmint or ginger will generally relieve vomiting. Brandy or tincture of ginger are other remedies that are much used.

2. **Mustard or Spice Poultice.**—A mustard or a spice poultice applied to the stomach is an excellent remedy for this trouble.

3. **Turpentine and Cayenne.**—Moisten flannels with oil of turpentine and apply to the stomach; or, a decoction made by adding cayenne pepper to spirits will do in place of the turpentine.

4. **Creosote.**—Creosote may be given in one-drop doses to relieve vomiting.

Physician's Remark.—Wood soot taken from the chimney contains creo-

sote so you can make a tea by pouring boiling water on a little wood soot and let the patient drink of it freely This will be found to be a good remedy.

5. **Ginger and Cloves.**—Make a strong tea of cloves or of ginger and cloves and give the patient a little every 5 or 10 minutes.

6. **Parched Corn.**—One of the very best remedies for nausea or vomiting is a tea made of parched corn.

7. **Oatmeal.**—Make some oatmeal into a cake with water and brown it like coffee. Make a tea of this and when drank it will check vomiting.

8. **Milk and Egg.**—To a pint each of fresh milk and water, which are sweetened to taste, add an egg which has been beaten for 20 minutes. Boil and drink of this when it is cold. Do not use it should it happen to curdle.

9. **Baking Soda.**—"An excellent remedy for sickness at the stomach," writes an Illinois woman, "is to drink half a teaspoonful of baking soda dissolved in half a glassful of hot water."

10. **Chickweed.**—Steep some chickweed and drink of it to stop vomiting.

11. **Lemon Juice and Salt.**—Give the juice of a lemon and a little salt in hot water. One teaspoonful is a dose.

12. **Corn.**—Shell some yellow field corn and brown it in a frying pan over the coals until it is nearly black, then pour on hot water and, after standing awhile, give the water in small quantities.

Remarks.—This is nearly the same as number six above but it is so good that it will bear repeating.

13. **Peach Leaves.**—Put a handful of peach leaves into a quart of cold water and let it stand for 24 hours, then pour off the water and take a teaspoonful of this peach water about 4 times a day to prevent vomiting.

14. **Fresh Air, Etc.**—A lady living at Grant, Ontario says: "Go out of doors and get fresh air. If this fails to help, wash the hands up to the elbows and the face in ice cold water. I saved one of my children that way when doctors could not help her. She was then two years old."

PEOPLE'S HOME REMEDIES FOR SEASICKNESS.

1. **Chloroform and Bromide of Sodium.**—Take 10 or 12 drops of chloroform and three times a day take 10 grains of bromide of sodium.

2. **Diet, Etc.**—A person affected with seasickness should lie down in the open air if possible. Raw salt oysters are generally easily digested and lemons are generally relished by the patient. The wearing of a tight girdle to compress the stomach is advised by sailors.

DIARRHEA AND SUMMER COMPLAINTS.

Symptoms.—These are too well known to need description.

Treatment.—The treatment depends upon the cause. If the diarrhea is due to bad food give from $\frac{1}{2}$ to 1 ounce of castor oil and with it a dessert spoonful of pargoric to prevent griping. This is for an adult. Or, give some spiced syrup of rhubarb. Give no foods until the diarrhea is checked and then give predigested milk, arrowroot and broths.

In diarrhea or dysentery in either children or adults I first give either castor oil or aromatic or spiced syrup of rhubarb. This is how I first came to use the spiced syrup of rhubarb. Over twenty years ago I was attending a bright young man who had a severe attack of dysentery that he had taken while going from Detroit to Chicago on the boat. He was in a serious condition. I could check the dysentery but in a few hours it would return in full force. His mother suggested the rhubarb to me. I consented to its use

and then watched the result. The patient passed a great amount of a thick liver-colored, jelly-like mass and improvement followed. In a few days I advised another dose. Again he passed the same kind of material and he was soon well. In diarrhea and dysentery the bowels often have irritating material in them that must be removed before an attempt is made to check the trouble. Either castor oil or rhubarb will remove this material and a cure is begun. Serious results sometimes follow the too sudden checking of these bowel troubles. It is generally a good thing to first move the bowels. Do you not remember how mother used to give us castor oil and laudanum or rhubarb alone? We doctors own much to the mothers of the land for the practical home remedies we have secured from them. Though in many cases the services of the physician are absolutely necessary yet, on the other hand, the practical physician will not fail to adopt any good home remedy no matter from what source it may come.

PEOPLE'S HOME REMEDIES.—

1. **Hot Milk.**—Drink freely of hot milk. The milk should not be boiled but should be heated as hot as it can be drank.

2. **Onion Poultices and Turpentine.**—Apply an onion poultice to the bowels or a cloth wrung out of turpentine.

3. **White Oak Bark, Blackberry Root, Etc.**—Take a handful each of white oak bark and blackberry root and $\frac{1}{2}$ ounce each of allspice, cloves and cinnamon. Make a decoction, sweeten with rock candy or loaf sugar and give a tablespoonful 3 times a day.

Physician's Remark.—These are all astringents and thus check the diarrhea.

4. **Oatmeal Tea, Etc.**—Mix some oatmeal with water, bake or brown it and then powder it and make a tea. If there is vomiting or sickness at the stomach apply a mustard plaster to the stomach. If there is griping the following injection should be given. Mix $\frac{1}{2}$ pint of molasses, 1 gill of castor oil, 20 drops of laudanum and $\frac{1}{2}$ pint of warm water. This is for an adult.

5. **Rice.**—Take half a pound of rice and pound it till fine. Boil it and eat slowly. This is good as a food in some kinds of diarrhea.

6. **Bacon and Onions.**—Slice some smoked fat bacon and fry it until you have half a pint of grease. While it is frying slice several large onions into the grease and when it is done pour off the mixture. The dose is a teaspoonful once a day. This remedy has cured many of the very worst cases of chronic diarrhea and should be tried.

7. **Rhubarb.**—Burn some pulverized rhubarb to black ashes in an iron dish, then powder it and give half a teaspoonful three times a day in a little water.

Physician's Remark.—Rhubarb will discharge all irritating material and burning it makes it somewhat antiseptic.

8. **Gum Arabic.**—Eating gum arabic has cured many cases of chronic diarrhea. Drinking freely of the mucilage of gum arabic is also good.

9. **Logwood.**—An excellent remedy for tuberculous diarrhea is a decoction of logwood. The dose is half a teacupful 2 or 3 times a day.

10. **Milk and Lime Water, Brandy, Etc.**—In treating chronic diarrhea take little nourishment except milk and lime water and give a teaspoonful of brandy in a little sweetened water several times a day.

11. **Blackberry Cordial.**—From a teaspoonful to a wineglassful of blackberry cordial at a dose is excellent for diarrhea. The following is a good

recipe for the cordial. To 2 quarts of blackberry juice and a pound of white sugar add half an ounce each of nutmeg, pulverized cinnamon and pulverized cloves. Boil together a short time and when cold add 1 pint of brandy.

Physician's Remark.—This is slightly astringent. Before using the cordial the bowels should first be made to move freely with castor oil.

12. **Corn Meal or Parched Corn.**—Brown some corn meal on the stove, then boil it in water like coffee and let the patient drink a teacupful 2 or 3 times a day. Parched corn ground and a tea made in the same way will do as well. This is one of the finest things that can be used for summer complaints.

13. **Baking Soda.**—A strong solution of common baking soda is an excellent remedy for diarrhea.

14. **Mutton Tallow.**—Melted sheep's tallow is fine for this trouble. Give 2 tablespoonfuls every 2 hours.

15. **Raspberry and Dewberry Roots.**—Diarrhea and summer complaints may often be checked by drinking tea made of raspberry or dewberry leaves or roots.

16. **Opium, Ginger, Peppermint, Etc.**—Take a 4-ounce vial and put into it 2 drams of denarcotized opium tincture (laudanum will do), 1 ounce of tincture of ginger and $\frac{1}{2}$ ounce of oil of peppermint and then fill the vial up with simple syrup. For adults the dose is 1 teaspoonful 3 times a day. This is great.

17. **Rhubarb, Camphor, Peppermint, Etc.**—Take equal parts of tincture of opium, tincture of rhubarb, capsicum, spirits of camphor and essence of peppermint and add a little chloroform. Take from 15 to 20 drops at a dose.

Physician's Remarks.—This recipe comes from Cameron, Texas. The lady sending it says, "We have used it with the best success. The facts are it can't be beat." This is for adults only as it is dangerous to give opium to children even in small quantities.

18. **Flour and Camphor.**—Stir together 1 tablespoonful of flour and $\frac{1}{2}$ teaspoonful of camphor diluted with water. The dose is 1 tablespoonful 3 times a day and oftener if necessary.

Remarks.—A lady living in Centerburg, Ohio, says she has used this for 25 years and that it is a never failing remedy.

19. **Blackberry Root Syrup.**—Take $\frac{1}{2}$ pound of the small roots of the blackberry, $\frac{1}{2}$ ounce each of allspice, cinnamon and cloves, $\frac{1}{2}$ pound of white sugar, $\frac{1}{2}$ pint of rye whiskey and 2 quarts of water. Boil the other ingredients down to a pint and add the spirits when cold. Dose—1 or 2 teaspoonfuls according to age every 2 hours.

Remarks.—"This is an old and tried remedy for summer complaints," writes one mother.

20. **"Sun Cholera Cure."**—The celebrated "Sun Cholera Cure" consists of equal parts of tincture of opium, tincture of capsicum (red pepper), rhubarb, camphor and peppermint. Take from 15 to 20 drops in 4 tablespoonfuls of water every half hour until relieved. After the patient is relieved it should be used twice only every 24 hours. This is for adults.

COLIC.

(Also see Baby Department.)

For Children.—Give $\frac{1}{2}$ grain of asafetida. Or, you can make a decoction of chamomile by putting 1 or 2 ounces of the plant into a pint of water

and boiling it down. Give in $\frac{1}{2}$ teaspoonful doses. Peppermint water or peppermint oil are also good. The dose of peppermint water is from $\frac{1}{2}$ to 1 teaspoonful and the dose of the peppermint oil is 1 drop.

For Adults.—Give 1 drop of tincture of colocynth in a little water every half hour until relieved. This is especially good where the patient is bent double with the colic.

Some years ago, at three o'clock on a Sunday morning, I was called eight miles into the country to see a bad case of peritonitis, so-called. The patient had been sick almost a week and two doctors thought the nine year old boy could not live. I took the case and after two weeks of hard work by all concerned the boy got well. Two weeks, to a day, after I had dismissed the case as cured, the father awoke me at midnight and told me the boy was again sick. I was worried for I was afraid it was another attack of peritonitis. I reached the home in about an hour and found him suffering with terrible pains at intervals of a few minutes but between the intervals he was free from pain and seemingly well. He had no fever and from the symptoms I decided he was suffering with neuralgia or colic in the stomach and bowels and, notwithstanding they told me that the boy had eaten nothing to bring on this attack, I gave him some quieting medicine and advised a large dose of castor oil and then went home disgusted at their carelessness in feeding, for I felt sure this was the cause of the trouble. When I returned next day they showed me the proceeds of the castor oil—a ball as big as a walnut. In the center of this ball was a raisin and around it was bread, thus forming a hard mass that caused the colic. Then the family remembered that the boy had eaten “mince pie” the previous day and that was the cause of this case of “Raisin and Bread Colic.”

PEOPLE'S HOME REMEDIES.—

1. **Mustard or Salt.**—For flatulent or common wind colic give, as an emetic, either a teaspoonful of mustard or salt to a teacupful of water. This may be repeated in 10 or 12 minutes if necessary.

Physician's Remark.—This is for colic caused by food in the stomach.

2. **Ginger.**—Hot water and ginger are especially good for common or wind colic.

3. **Peppermint or Spearmint.**—Give a little essence of peppermint or spearmint in hot water for colic. This is particularly good where the patient is sick at the stomach.

Physician's Remark.—In its action either of these is an anodyne, anæsthetic and antiseptic.

4. **Mustard Plaster, Salt and Molasses, Castor Oil, Etc.**—Put a mustard plaster over the pain and if the bowels are constipated give an injection of salt and molasses, castor oil, or soap and warm water.

Physician's Remark.—The injection removes the cause by taking the irritating matter from the bowels. The mustard causes counter-irritation.

5. **Herb Tea.**—For bilious colic give at one injection a strong decoction made of the following herbs. Take 1 ounce of senna, 1 ounce of thoroughwort, 10 grains of cayenne, $\frac{1}{2}$ dram of lobelia and 1 pint of boiling water. To this decoction should be added $\frac{1}{2}$ pint of molasses and a teaspoonful of epsom salts.

6. **Turpentine, Etc.**—Another remedy for bilious colic is to give an injection of 1 ounce each of spirits of turpentine, wine of ipecac and castor oil and $\frac{1}{2}$ pint each of molasses and warm water.

Physician's Remark.—This moves the bowels and the turpentine rids them of the gas.

7. **Vinegar.**—Vinegar weakened with water and taken as a drink is a good remedy for many cases of colic.

8. **Essence of Ginger.**—Essence of Jamaica ginger is excellent for pains in the stomach and is a fine tonic for indigestion. It gently stimulates the stomach and warms the whole system. The dose for an adult is a teaspoonful in a wineglassful of sweetened water. For a child under 12 years give half a teaspoonful. It may also be used externally.

9. **Mustard Poultice, Castor Oil, Peppermint and Ginger.**—For wind colic bathe the feet and legs in hot water and apply hot salt or mustard poultices over the stomach and bowels. Open the bowels with castor oil and drink freely of peppermint or ginger tea.

10. **Laudanum, Camphor and Peppermint.**—For severe cases of flatulent or wind colic in adults give in teaspoonful doses a mixture of equal parts of laudanum, tincture of camphor and essence of peppermint. Give every three hours for four doses if necessary.

11. **Hot Fomentations.**—Apply warm fomentations of boneset, wormwood, stramonium leaves or hops over the stomach and bowels for colic.

12. **Peppermint, Sugar, Etc.**—Either peppermint or spearmint tea with a little saleratus and sugar added will generally give relief.

13. **Salt and Water.**—A mother writes that injections of salt and water will almost always give instant relief from colic.

14. **Paregoric.**—For wind colic give a few drops of paregoric in one-third of a teaspoonful of warm water. This is the dose for a child.

15. **Rhubarb, Anise, Etc.**—Take $\frac{1}{4}$ ounce of tincture of rhubarb, $\frac{1}{4}$ ounce of anise, $\frac{1}{4}$ ounce of laudanum, $\frac{1}{4}$ ounce of magnesia, 1 quart of boiling water and 1 cupful of granulated sugar. Put the sugar in the boiling water, let it get cold and then add the other ingredients. Keep covered tightly and in a cool place. The dose is $\frac{1}{2}$ teaspoonful every half hour and this dose may be increased as the child grows older.

Physician's Remarks.—I never like to give laudanum to a child for it is sometimes dangerous to children even in small quantities. It may be taken in proper doses by grown people but for children I would prefer some other remedy.

16. **Oil of Peppermint.**—Give two drops of oil of peppermint in a cup of hot water without sugar.

17. **Glycerine.**—Give $\frac{1}{2}$ teaspoonful of glycerine. This is very good.

18. **Baking Soda.**—For wind colic caused by gas in the stomach give half a teaspoonful of baking soda in half a glass of water.

19. **Warm Water.**—Give babies plenty of warm water that has been boiled and always use a bottle with a nipple.

20. **Caraway Seed.**—Put 1 teaspoonful of caraway seeds into half a cup of hot water and give a teaspoonful every half hour. There is nothing better. A lady writes from Chicago saying, "I am a mother of six children and have always found this an excellent remedy for colic."

Physician's Remarks.—Caraway contains a volatile oil which is good as a cure for colic. Here is a combination you will find excellent for flatulence or colic. To 2 ounces of caraway tea add 1 ounce of peppermint water, 1 dram of baking soda and 2 ounces of syrup of rhubarb. The dose is from 1 to 2 teaspoonfuls every 3 or 4 hours. Each of these ingredients is good when used alone and all of them together form an excellent combination for colic.

21. **Castor Oil and Paregoric.**—Half a teaspoonful each of castor oil and paregoric, mixed, will be found good. This is for an adult.

Physician's Remark.—Castor oil rids the bowels of irritating material and paregoric relieves the pain.

22. **Ginger Tea, Etc.**—Put hot flannel cloths on the stomach and a bottle of hot water to the feet and give either ginger or anise tea.

23. **Peppermint and Castor Oil.**—If there is constipation with the colic give an injection of an ounce of warm peppermint tea with a teaspoonful of castor oil in it. Spearmint tea will do in place of peppermint.

24. **Salt Water.**—Put a teaspoonful of salt into a pint of water and have the patient drink it and then go to bed. This is a very quick and effective remedy.

25. **Bread.**—Break a hot loaf of bread in two pieces and place the halves opposite each other; one upon the bowels and one upon the back. "This treatment will relieve any kind of colic," writes a mother from Texas.

26. **Soot Tea.**—One mother writes that she has never found anything to cure the colic so quickly as soot tea. Pour hot water upon a little soot from the chimney and have the child drink it. It seems to absorb all the gas.

27. **Calamus.**—Give from 20 grains to 1 dram of calamus. For infants you can combine it with calcined magnesia.

28. **Pills for Colic.**—The following pills are good for flatulent colic. Each pill should contain 1 grain each of dioscorein and asclepidin and 2 grains of ginger. Instead of the asclepidin you can use the same quantity of unicorn root if preferred. Give one pill every 2 or 3 hours.

29. **Chamomile.**—For colic in adults use oil of chamomile. The dose is from 5 to 15 drops on sugar.

30. **Wild Yam.**—In ordinary cases of colic give from 2 to 4 ounces of a decoction of wild yam root every half hour until relieved. In bilious colic the dose is half a pint every half hour.

31. **Catnip Tea.**—Warm catnip tea is one of the old fashioned remedies our grandmothers used to give the children for colic and it is just as good today as it was then. Put an ounce of the dried herb into a pint of boiling water, cover and let stand for an hour. Drink of it freely.

32. **Enema for Bilious Colic.**—Pour a quart of boiling water over 4 ounces each of senna and boneset; steep for 10 minutes with moderate heat; strain; and while hot add 4 ounces of molasses, 2 drams of powdered bayberry bark and 2 drams each of common salt, powdered lobelia seed and powdered capsicum. This is to be used as an injection. Give half this quantity at a time as hot as possible and repeat if necessary in 15 minutes. A decoction of wild yam may be drank at the same time.

33. **Pink Blows, Etc.**—To 2 ounces each of common pink blows, smellage root and pleurisy root add a sufficient quantity of boiling water and boil down to a quart; strain and add a quart of proof brandy and a pound of sugar. The dose for an infant is a teaspoonful and may be repeated if necessary. This is good for colic, fits and green stools in children.

DYSENTERY.

This disease is treated under Contagious and Infectious Diseases.

CONSTIPATION.

Causes.—People of a nervous and bilious temperament and of a dark type are much troubled with constipation. A sedentary life conduces to consti-

pation. A lazy life in which the calls of nature are irregularly attended to or are habitually neglected leads to over distention of the rectum or paralysis of it. This is a common cause of constipation.

Another cause is the constant use of concentrated articles of food such as meats in which little residual matter is left to stimulate the worm-like motion of the bowels. A very coarse diet may also tend toward constipation because there is so much residual matter left that it stops up the bowels or causes fecal impaction.

A change of drinking water or water from a chalky region may aid in causing constipation. Other causes are bodily weakness and diseases such as neurasthenia, hysteria, acute fevers and liver disorders. The habitual use of purgatives may also weaken the bowels and cause constipation.

The local causes are: (a) Atony or weakness of the muscles of the abdomen caused by fat or in females often by being pregnant. (b) Atony or weakness of the large bowel from chronic inflammation. (c) Pressure by tumors. (d) A narrowing of the intestine either from external or internal constriction or pressure. (e) Tightness of the sphincter ani or muscle of the anus.

TREATMENT.—

Remove the causes if possible. There should be a regular time for the movement of the bowels each day. This will help a great deal. Habit has much to do with constipation, especially when one is not born with it. Make the bowels move at a certain time each day and remain at stool without straining until they do. Exercise is good and especially such exercises as act upon the muscles of the abdomen. Horseback riding and gymnasium work are good. Massaging the bowels is very effective. Special attention, though, to the calls of nature should be esteemed a duty and proper time and heed must always be given to the complete emptying of the bowel. Take time and have a regular hour each day. Young girls should be specially instructed for they are very likely to neglect the call of nature.

Attention to the diet often avails much. Foods that are easily digested but leave a moderate amount of residual matter after digestion are to be recommended. Such foods as bread made from unbolted flour, plenty of vegetables and fruits, butter and such loosening articles as figs, honey and molasses and a glass of cold water taken regularly at bed time and in the morning on arising, are all good. Bread should be well baked. The old style stone mill flour is the best. Graham flour and corn meal made in different ways are both good. Eat fruits of all kinds and especially apples. Do not drink strong tea or coffee as they are binding as are also meats and especially beef. Avoid rich cakes and pies. Eat good healthful food and do not over eat. Oatmeal and corn and wheat flakes are of great benefit. The less you work or exercise, the less you should eat and especially of hearty and substantial foods. Milk is constipating for some people. Eat slowly and thoroughly chew your food; it will then digest better and you will not need to eat so much. Get up from the table a little hungry.

As before stated, you ought to have a regular time for your bowels to move. Go to the closet every day at a certain time and if necessary wait and determine that you will have a movement. Habit has a great deal to do with constipation. Do not strain at stool.

If the anus or outlet is too small have it stretched or dilated but have this done gradually. In drug stores you will find dilators for this purpose in

sets of three or four. These are not only good for constipation but also for piles and dyspepsia as well as nervous trouble.

When at stool do not sit down and read and put off attending to the call of nature. Make attention to this call your first duty after breakfast.

There are laxatives and cathartics and tablets and pills of many kinds. Of course if you can't have regular passages without these you must resort to their use. It is better to take "physics" than to have constipated bowels with all the troubles that go with constipation. Sometimes, eating dandelion root will prove beneficial. Senna tea, in from 1 to 5-ounce doses, is also good but it causes griping. Dandelion, yellow dock, burdock, culver's root and wahoo, made into a tea and drank freely, is good. You can also use this combination in the fluid extract form. These fluid extracts can be bought at any drug store and should be mixed in equal parts. The dose of the combination is from $\frac{1}{2}$ to 1 teaspoonful from 2 to 4 times a day as needed. This will be found very good and it is not especially harmful.

Aromatic cascara, fluid extract of cascara and cascara evacuans are all good as are rochelle and epsom salts. Seidlitz powders and Hunyadi and other waters give temporary relief.

Spiced syrup of rhubarb is very good for infants and children in from $\frac{1}{2}$ to 1 teaspoonful doses. The aromatic syrup of rhubarb is very good where there is irritating material in the bowels causing diarrhea. This is good for both infants and adults.

The compound infusion of senna is good. The dose is from 1 to $2\frac{1}{2}$ ounces every 4 hours until it operates. Sulphur and molasses, mixed, is a good laxative at times. Much benefit will be derived from regular massaging of the abdomen.

Remember that by constant care in diet and habits you can overcome many cases of constipation. Never allow one day to pass without a good passage from the bowels. Injections, or enemas, are good as a temporary measure but they are likely to irritate the bowel. If you feel dizzy, irritable, cross and lazy, and your bowels have not moved recently, you should cause a movement by giving an enema or by using some of the other means mentioned. Do not take anything to act upon your liver or bowels when they are acting well simply because it is a certain season of the year. If your bowels are regular and you think your liver is torpid, drink lots of good water and eat very little or nothing for a day or two. Most of us eat too much. Many of our ailments are caused by over eating and among these ailments are sluggish kidneys, torpid liver and bowels, dizziness, neuralgias and headaches. Eat less food and drink more water.

In closing this subject I want to give a prescription gotten up and frequently prescribed by myself.

For Constipation.—Take $\frac{1}{4}$ grain of aloin, $\frac{1}{4}$ grain of nux vomica, $\frac{1}{8}$ grain of podophyllin and 2 grains or more of powdered gentian; mix thoroughly. This quantity will make one capsule or it can be rolled into a pill. Of course you are to have as many made as is deemed necessary. One of these pills or capsules may be taken every night if necessary. This is not a cathartic but a light tonic-laxative and I know it is excellent where a tonic-laxative is needed.

PEOPLE'S HOME REMEDIES.—

1. **Castile Soap and Rhubarb.**—Make some pills of castile soap and rhubarb, using half a grain of each. Take two pills before retiring.

Physician's Remark.—The rhubarb is laxative and the soap is oily and slightly laxative also.

2. **Diet, Etc.**—If you are constipated drink freely of cold water and also use warm water as an injection. Eat fruits, vegetables and soups. Cracked wheat is a fine remedy. Attend regularly and promptly to the calls of nature.

3. **Senna and Boneset.**—An occasional dose of senna tea is good for constipation, also an injection of boneset tea with a little molasses is effective.

4. **Charcoal and Molasses.**—Mix charcoal with a little molasses and take from a teaspoonful to a tablespoonful as often as required to produce the desired effects. At the same time it will be well to bathe the bowels occasionally with vinegar to which a little pepper has been added.

Physician's Remark.—The molasses is loosening and the charcoal is an antiseptic.

5. **Hot Water.**—Hot water drank freely half an hour before bed time is soothing to the bowels and one of the very best laxatives in cases of constipation.

6. **Baking Soda.**—A very little baking soda will often give relief.

7. **Figs.**—For constipation in children give them a fig each morning.

8. **Bean Biscuit for Constipation.**—Take 1 pint of beans, $\frac{1}{2}$ pint of flour, 4 teaspoonfuls of molasses or sugar, sour milk with soda to sweeten, and a piece of butter the size of an egg. Make quite a thick batter and bake in gem pans. Eat two biscuits at each meal until relieved.

Physician's Remark.—These biscuits leave a large residuum and the butter and molasses are loosening.

9. **Olive Oil.**—This is also good for gall stones.

10. **Lemon Juice and Sugar.**—Squeeze the juice from half a lemon and add about 3 tablespoonfuls of water and a teaspoonful of sugar and drink before breakfast every morning for a week or ten days. This is very good.

11. **Figs and Dates.**—Eat figs and dates.

12. **Dandelion.**—Eat dandelion greens.

13. **Rhubarb.**—Eat plenty of rhubarb.

14. **Senna Tea.**—Use a tea made of senna. The dose is from 2 to 4 ounces. By adding 1 teaspoonful of cream of tartar to a teacupful of the infusion, you will take away the unpleasant taste. It is not to be used when there is inflammation of the intestines, piles or falling of the bowels.

15. **Wahoo.**—The bark of the root of wahoo is good for a torpid liver and for constipation. The dose of the tincture is 1 dram and of the powder from 20 to 30 grains. This is also good in combination with blood remedies.

16. **Flaxseed.**—A decoction of flaxseed is good as an injection.

17. **Confection of Senna.**—Confection of Senna is a splendid mild laxative for constipation. It can be bought at any drug store but here is the formula for those desiring to make it themselves. Take 8 ounces of senna, 4 ounces of coriander seeds, 3 ounces of licorice root (bruised), 1 pound of figs, $\frac{1}{2}$ pound of pulp of prunes, $\frac{1}{2}$ pound of pulp of tamarinds, $\frac{1}{2}$ pound of pulp of cassia, $3\frac{1}{2}$ pounds of refined sugar and 4 pints of water. Give one to two teaspoonfuls at night.

18. **Cathartic Pills.**—Take 6 ounces of mandrake root, 4 ounces of culver's root or black root, 4 ounces of blood root, 8 ounces of blue flag, 4 ounces of lobelia seeds and $\frac{1}{2}$ ounce of cayenne pepper. These should be finely pulverized, sifted and mixed well. To form into pills make a thick mucilage of gum arabic, peach tree gum or slippery elm bark by dissolving in either

water or molasses and moisten the powders just enough to make them adhere. Form in pills the size of a pea and roll them in fine slippery elm, bayberry or flour. Lay them in a dry place exposed to the air to dry and put into boxes with fine elm powder. Take from 3 to 6 at bed time.

CHOLERA INFANTUM.

(See Baby Department for Physician's Treatment of this Disease.)

PEOPLES' HOME REMEDIES.—

1. **Spiced Syrup of Rhubarb, Etc.**—For the severe vomiting of cholera infantum apply a mustard poultice to the stomach and spinal column; or, a spice plaster laid over the stomach often gives relief. For the diarrhea give a teaspoonful of the spiced syrup of rhubarb every half hour until it acts on the bowels, then it may be given every 3 or 4 hours. In a day or two this should be followed with a tea made of the bark of blackberry root, cherry tree bark and strawberry root and some of the leaves of each added. To this add a little cinnamon and cloves and sweeten with white sugar. The child should have plenty of fresh air even if it has to be carried in the yard, street, or park. If it is too sick to be taken out of doors it may be carried on a large pillow in a well ventilated room.

Physician's Remarks.—These remedies are slightly astringent; the cloves are a stimulant and antiseptic and the cinnamon contains tannin which is astringent. The volatile oil of the cloves makes it a hemostatic which means that it is good to stop bleeding. The mustard or spice plaster is a counter-irritant.

2. **Whites of Eggs, Etc.**—Beat the whites of two eggs thoroughly, mix with water and add a little sugar and a teaspoonful of orange flower water. Give a teaspoonful every hour. It seems to form a coating for the bowels.

3. **Rhubarb, Baking Soda, White Sugar and Peppermint.**—Into a tea-cup put half a teaspoonful of baking soda, a teaspoonful of powdered rhubarb and two tablespoonfuls of white sugar. Mix these and add $\frac{1}{3}$ teaspoonful of essence of peppermint and stir while pouring the cup two-thirds full of boiling water. Let this settle and from the top give a child a year old half a teaspoonful every hour.

Physician's Remark.—The soda corrects the stomach, the rhubarb is a slight laxative and gets rid of the irritating material in the bowels and the peppermint is an anodyne, anæsthetic and antiseptic.

4. **Castor Oil and Blackberry Cordial.**—Give half a teaspoonful of castor oil and 12 drops or more of blackberry cordial every hour for 4 hours. "This has been used with success many times when other remedies seemed to do no good," writes a mother living at Garrettsville, Ohio.

Physician's Remarks.—Castor oil drives all the irritating material from the bowels and when this is all removed you should stop its use. A good way to make the blackberry cordial is to take equal parts of cinnamon, cloves and nutmeg and pour enough dilute alcohol over them to make a tincture. Take 21 parts of this tincture and add 3 parts of fresh blackberry juice and 3 parts of simple syrup. Mix, and take a dram or more at a dose according to age.

5. **Cinnamon Bark.**—Frequently give small doses of a strong tea made from cinnamon bark. Giving castor oil regularly every day is also a good remedy.

Physician's Remark.—The castor oil casts out the irritating material and the cinnamon tea checks the looseness of the bowels.

6. **Flour and Milk.**—Put some white flour into a cloth bag, boil for three hours and when cool take off the outer part or skin and scrape fine. Mix this with boiled milk until it is of the consistency of cream and let the child drink of this.

CHOLERA MORBUS.

Sporadic Cholera—Cholera Nostras.

Description.—This is a self limiting disease characterized by vomiting and purging, colicky pains, and often muscular cramps.

Causes.—Age and season have much to do with it. It usually occurs in the summer time. Warm, damp and sultry weather and improper food such as unripe fruit, cucumbers and egg plant are common causes.

Symptoms.—It comes on suddenly with pain in the abdomen (belly), vomiting and diarrhea. It is often attended with cramps in the calves of the legs.

TREATMENT.—

Place a large mustard plaster or poultice over the stomach and abdomen and follow with flaxseed poultices if necessary.

If there has been indigestion or if the patient has been eating indigestible food, give laxatives. A good treatment is to drink lots of water to wash the food and mucus from the stomach. This will cause more vomiting for the time being but the vomiting will stop as soon as the food and mucus are washed from the stomach. For the excessive thirst give in the mouth small pieces of ice over which a little brandy has been sprinkled.

Allopathic Treatment.—After giving the laxatives or washing out the stomach as above give 15 drops of essence of wintergreen mixed with an equal quantity of laudanum. Give this in a little water. Sometimes a few drops of camphor mixed in a little water and dropped on the tongue will stop the vomiting. Give a hypodermic injection of $\frac{1}{4}$ grain of morphine.

Homeopathic Treatment.—Give the second dilution of *Veratrum Alb.* Put 10 or 15 drops into half a glass of water and give from $\frac{1}{2}$ to 1 teaspoonful every 15 minutes.

It is always well to keep quiet the next day for the stomach and bowels will be sore and you might cause inflammation of these parts if you move much. If very sore you can use fomentations of hops, etc.

PEOPLE'S HOME REMEDIES.—

1. **Spice Poultice.**—A spice poultice made of a teaspoonful each of cinnamon and cloves and a tablespoonful of flour wet with brandy may be applied to the stomach. Wash the stomach out by giving freely of warm water and flaxseed tea.

2. **Salt, Pepper, Vinegar, Etc.**—Take 1 tablespoonful each of table salt and ground black pepper and $\frac{1}{2}$ teacupful each of warm water and cider vinegar. Of this take a tablespoonful every few minutes until the whole is taken. Stir each time before using. This mixture will stop the purging and settle the stomach.

3. **Cloves, Cinnamon, Blackberry Root, Etc.**—Apply warm fomentations of hops and vinegar to the bowels and bathe the feet in warm saleratus water. After the severest part of the attack is over give two or three times a day a teacupful of a strong decoction of cloves, cinnamon and blackberry root. A strong decoction of burnt corn is also an excellent remedy.

4. **The Celebrated "Sun Cholera Cure."**—This consists of equal parts, mixed, of tincture of opium, tincture of capsicum (red pepper), rhubarb, camphor and peppermint. Take from 15 to 20 drops in four tablespoonfuls of water every half hour until relieved. This dose, when used twice only every 24 hours, is excellent for summer complaint.

Physician's Remark.—Because of the opium this should be given to adults only.

5. **Mustard Plaster, Etc.**—Keep the patient warm and the feet wrapped in warm blankets. Use hot water bottles to the feet and limbs and put a mustard plaster over the stomach. Internally use the following tried remedy. Add a tablespoonful each of table salt and ground black pepper to half a tumblerful each of hot water and cider vinegar; mix, and give a tablespoonful every few minutes until the whole has been taken.

6. **Poppies, Chamomile Flowers, Etc.**—Make a decoction of poppies and chamomile flowers. Wring flannels out of the hot liquid and apply over the stomach. At the same time the following mixture may be given: 1 dram of magnesia and 4 ounces of peppermint water. If there is much diarrhea and the case has run for some time add two drams of paregoric to the above. Shake the mixture thoroughly before taking. The dose is a teaspoonful every 20 minutes.

7. **Rum, Molasses and Ginger.**—Take a glassful each of West India rum, molasses and spring water; add 3 tablespoonfuls of ginger; mix, and drink. This is a sure cure for cholera morbus.

Physician's Remarks.—The rum is stimulating, the molasses is a little loosening and the ginger stimulates the stomach and bowels.

8. **Asafetida and Whiskey.**—Put some asafetida gum into whiskey and let stand for some time. Shake well and give a small dose of the liquid and it will often give instant relief. It is also good for wind colic in small children.

9. **Cayenne Pepper, Camphor, Etc.**—Take equal parts of cayenne pepper, tincture of opium, tincture of rhubarb, essence of peppermint and spirits of camphor; mix well. The dose is from 15 to 30 drops in sweetened water according to age and the violence of the symptoms. Repeat every 15 or 20 minutes until relieved.

Physician's Remark.—This is good for adults. Because of the opium it is better not to give it to children.

PEOPLE'S HOME REMEDIES FOR STOMACH AND BOWEL TROUBLES.

1. **Milk and Lime Water.**—Give a little lime water in milk. This is fine for any kind of stomach or bowel trouble.

2. **Onion Tea.**—Give the baby some onion tea if it has the colic. This is also good for a fretful baby and is not injurious like many of the soothing syrups which are used.

3. **Peppermint or Spearmint Tea.**—Warm peppermint or spearmint tea is an old tried remedy for wind on the stomach.

4. **Saleratus Water.**—When the gas on the stomach causes heartburn it can be relieved by taking half a teaspoonful of saleratus in half a cup of water.

5. **Magnesia.**—Magnesia in two or three teaspoonful doses in a glass of water is fine for the stomach and for heartburn.

6. **Charcoal.**—For waterbrash when caused by gas give a teaspoonful of prepared charcoal three times a day.

7. **Charcoal and Soda.**—For sour stomach give teaspoonful doses of prepared charcoal; half a teaspoonful of baking soda; or, a dessert spoonful of lime water.

8. **Peach Leaf Tea.**—For inflammation of the stomach and bowels give a cold tea made of peach leaves. A tablespoonful may be taken every hour or two.

9. **Ginger, Camphor and Mustard.**—For stomachache or cramps in the stomach use either essence of ginger or spirits of camphor. A mustard poultice applied to the stomach is also an excellent remedy.

10. **Croton Oil.**—For chronic inflammation of the stomach rub a little croton oil over the stomach or apply a mustard plaster or a mustard poultice.

11. **Rhubarb, Ginger and Castile Soap.**—For loss of appetite mix the following and make into 12 pills. Take $\frac{1}{2}$ dram of powdered rhubarb, 12 grains of powdered ginger and 1 scruple of castile soap. Take two pills every night or every other night according to the case.

12. **White Oak Bark.**—For falling of the bowel add 1 ounce of white oak bark to 1 pint of water; boil away one-fourth; strain, and add 1 scruple of alum. Wash the parts with this using a soft sponge for the purpose.

Physician's Remark.—These remedies are good for this purpose because of their astringent or puckering power.

13. **Fruit.**—Ripe fruit stewed in molasses is relaxing to the bowels and a good food for the patient with stomach or bowel trouble.

14. **Tannin, Golden Seal, Etc.**—For falling of the bowel, any good pile ointment with a dram of tannin added will be found beneficial. As an injection use a strong decoction of white oak bark or a decoction of equal parts of golden seal and the root of Solomon's seal. Retain the injection as long as possible.

Physician's Remark.—These ingredients are puckering or astringent.

15. **Sugar, Orange Juice and Soda.**—Dissolve 2 teaspoonfuls of sugar in half a glass of water, add the juice of an orange and stir in a teaspoonful of baking soda. Drink while effervescing.

16. **Champagne.**—During sick stomach, champagne can often be taken when nothing else can be retained.

17. **Royal Mint Sauce.**—Put 1 teaspoonful of Royal Mint Sauce into a little hot sweetened water and give this. A lady living in Lincoln, Illinois says: "It saved my daughter's life when very sick from eating bananas."

18. **Treatment.**—When there is gas in the stomach (chronic) causing colic, etc., refrain from drinking tea, coffee or any other drink while eating and for $2\frac{1}{2}$ hours afterward. If constipated use some cathartic and perhaps a tonic may also be needed under the advice of a physician, but the refraining from drinking as above mentioned is very important. A lady living in Massachusetts says she practiced this treatment under a physician in Springfield, Mass. with entire success and her case was a serious one of many years' standing.

19. **Clam Broth.**—Clam broth is good for a weak stomach.

20. **Spruce Beer.**—Take of the essence of black spruce, $\frac{1}{2}$ pint; ginger, pimento and hops, of each 4 ounces; water, 3 gallons. Boil for 10 or 15 minutes; strain; add warm water, 11 gallons; molasses, 6 pints; and yeast, 1

pint. Mix, and allow the mixture to ferment for 24 hours. It may be drank freely.

21. **Calamus Tea.**—Make a tea of calamus by scalding 1 ounce of the root in a pint of water. The dose is from 4 to 6 ounces. This is good as a tonic for dyspepsia, flatulent colic and want of tone of the stomach.

22. **Chamomile.**—A cold tea of this is good for dyspepsia and irritable stomach.

23. **Turkey Corn.**—This is a good tonic. Make a tea by adding 4 drams of the powdered bulb to a pint of water and give from 1 to 4 ounces 3 times a day. Or, you can use the tincture of turkey corn in from $\frac{1}{2}$ to 1 teaspoonful doses 3 times a day.

24. **Golden Seal.**—Golden seal is a tonic and is good for dyspepsia. The dose of the tincture is from $\frac{1}{2}$ to 1 dram and the dose of the powder is from 5 to 10 grains. Use the smaller doses for dyspepsia.

25. **Blue Flag.**—This is a splendid liver remedy. The dose of the tincture is from 10 to 20 drops four times a day.

26. **Quassia.**—A tea made from quassia is a good bitter tonic. The dose is from 1 to 3 ounces.

27. **Gentian.**—Gentian makes a good tonic. The dose of the tea is from 1 to 2 ounces; of the powder, 10 grains; and of the tincture 1 dram. This may be combined with other bitter tonics.

28. **Spring Tonic.**—Dissolve 1 ounce of rochelle salts and 1 ounce of cream of tartar in 1 pint of boiling water. Put into a bottle and take a small wineglassful each morning. This is good for the stomach and for the complexion.

Physician's Remarks.—This acts upon the bowels and kidneys.

29. **Bitter Tonic.**—Take 1 pound each of poplar bark, golden seal, bayberry (bark of root) and columbo root; 6 ounces each of capsicum and cloves and 4 pounds of loaf or lump sugar. Pulverize, sift and mix well. The dose is 1 teaspoonful in either hot or cold water. Or, 1 ounce may be added to a quart of wine and a wineglassful taken 3 times a day.

30. **Restorative Bitters.**—This is a tonic and is especially good for weakness from diseases of women such as amenorrhea, leucorrhea, weak back, etc. The dose is from 1 to 2 ounces 3 or 4 times a day. Take comfrey root, Solomon's seal root and spikenard root, of each (bruised) 1 ounce; chamomile flowers, columbo root and gentian root, of each (bruised) $\frac{1}{2}$ ounce; sherry wine, 4 pints; and boiling water, sufficient to cover well. Place the herbs in a vessel, cover with boiling water and let the herbs steep for 24 hours, closely covered, then add the sherry wine. Let it stand for 14 days and then press and filter. This is a good strengthening bitter tonic.

31. **Tonic.**—A good tonic is the following. Take spikenard root, Solomon's seal root, gentian root, wild cherry bark and peach root, of each (bruised) 1 ounce; add 4 pints of boiling water, let simmer slowly to 1 pint; then add good native wine, 4 pints. Steep for 7 days, press, filter and add 2 ounces of loaf sugar. The dose is from 1 to 2 ounces 3 or 4 times a day.

32. **Wine Bitters or Compound Wine of Golden Seal.**—Take 1 dram each of golden seal root, tulip tree bark and bitter root; add $\frac{1}{2}$ dram of cayenne pepper and 4 pints of sherry wine. Steep for 14 days with occasional shakings, then press and filter. This is a bitter tonic and is good for dyspepsia and weakness. The dose is from $\frac{1}{2}$ to 2 ounces after meals.

33. **Bitters for Dyspepsia.**—Take golden seal root, bitter root and orange

peel, of each in powder form, 1 dram; prickly ash berries, $\frac{1}{2}$ dram; and over these pour $\frac{1}{2}$ pint of boiling water. Mix and let stand in a closely covered vessel for 24 hours and add $1\frac{1}{2}$ pints of good native wine (sweet). The dose is from $\frac{1}{2}$ to 2 ounces either before or after meals.

34. **Golden Seal, Blue Cohosh, Etc.**—Mix together $\frac{1}{2}$ ounce each of golden seal, blue cohosh and helonias. Each is to be in powdered form. The dose is from $\frac{1}{2}$ to 1 dram in water 3 times a day. This is good for dyspepsia, chronic gastritis, distress after eating and ulcerous sore mouth.

35. **Liver Pill for Epidemic Dysentery.**—Take 1 dram of powdered lap-tandrin, $\frac{1}{2}$ dram of powdered podophyllin and 5 drams of sugar of milk and mix all thoroughly. Give from 5 to 8 grains every hour or two until the bowels move freely.

36. **Blue Flag, Mandrake, Bitter Root and Milkweed.**—For obstinate constipation, liver troubles and rheumatism use the following herbs in powder form. Take 1 ounce each of blue flag, mandrake, bitter root and swamp milkweed and $\frac{1}{2}$ ounce of blood root. Mix thoroughly and take from $\frac{1}{2}$ to 1 dram 3 times a day in tea or water.

INFLAMMATION OF THE GULLET.

This is usually caused by poison. Dilate the stricture with instruments

SPASM OF GULLET.

This is rarely met with except in insane or hysterical persons.

INFLAMMATION OF THE SMALL INTESTINES.

Catarrhal Enteritis.

Symptoms.—There is pain and griping in the bowels, diarrhea and loss of appetite.

TREATMENT.—

Rest in bed and after the bowels have been moved freely with castor oil give bismuth in from 5 to 10-grain doses.

The first time I ever saw the "Corn Sweat" used was in the case of a married lady about forty years of age who was suffering from inflammation of the bowels. The patient did not get along as well as she might and her husband asked me if I would object to the use of the "Corn Sweat." He explained the method as I have described it in the Nursing Department. The husband had learned this from his mother who was one of the old pioneers of Michigan and a woman of vast experience with herb remedies and home aids.

I at once saw the possibilities of this "Corn Sweat" and consented to its use. The result was a great benefit to the patient about whom I was so worried. The explanation is very simple. The sweating opened the pores of the skin thoroughly so that it could perform its functions and throw off the poison from the system. The capillary or skin circulation was fully restored, thereby taking some of the blood from the bowels and relieving the congestion of these organs. I understand that Dr. Nancrede, Prof. of Surgery, in the University of Michigan recommends this "Corn Sweat" when sweating is needed.

PEOPLE'S HOME REMEDIES.—

1. **Lye Water, Mustard Poultices, Etc.**—For inflammation of the bowels put the feet into warm lye water which is not very strong and apply mustard poultices to the abdomen, along the backbone and to the feet. After consider-

able redness has been produced remove the poultices and apply hot fomentations of hops and stramonium leaves or hops and tansy. Change them according to the pain.

2. **Hot Water Cloths.**—Apply cloths wrung out of hot water to the affected parts.

3. **Cold Water Cloths.**—Wring cloths out of very cold water, place on the affected parts, cover with a dry towel and change often.

4. **Lard and Turpentine.**—Warm and mix well four parts of lard with 1 part of turpentine and grease the patient thoroughly over the bowels; then cover the bowels with a warm woolen cloth. A lady living in Rockford, Ohio says that she saved a child with this treatment that had been given up to die.

5. **Bran, Meal or Flaxseed Poultices.**—Apply poultices of bran or meal, changing as often as they cool. Flaxseed is also good. A dose of castor oil should be given if the bowels are not loose enough.

INFLAMMATION OF THE ILEUM-COLON.

Ileo-Colitis of Childhood.

Symptoms.—This manifests itself by purging, vomiting and abdominal distress. In the mild form there is a slight fever from 1 to 2 degrees above normal. Daily there are several loose movements of the bowels. If the case is more severe there is pain in the bowels, vomiting, high fever and frequent passages of yellow or greenish stools containing mucus and undigested food. There may be straining and the stools may be streaked with blood. The tongue is coated, the bowels tender to the touch and the child rapidly loses strength as it does with cholera infantum.

The disease is far more dangerous for children under 4 years than when they are older. High fever, many stools, much vomiting, much mucus, marked nervous symptoms and signs of poisoned blood are all bad symptoms.

TREATMENT.—

Herb Remedies.—Cranesbill steeped in milk is very good for diarrhea and dysentery. Oil of fireweed is good for dysentery. The dose is 5 drops for adults and should be given from 1 to 3 times every hour. A tea made of path weed is also fine for dysentery. Use from 2 to 4 ounces to a pint of water and give from 1 to 2 ounces every 2 or 3 hours.

Allopathic Treatment.—If there are evidences of an inactive liver give very small doses of calomel every third or fourth day. If there is much mucus in the stools give from 1 to 3 teaspoonful doses of castor oil.

Homeopathic Treatment.—During the first 24 hours give the second dilution of Aconite. Put 10 or 15 drops into half a glass of water and give 2 teaspoonfuls every 2 or 3 hours.

Give 1 tablet of the third dilution of Arsenicum every hour. This is to be used when the patient is thirsty, restless and vomits water or watery fluid and when there is a watery, burning diarrhea that makes the anus sore.

Give the third trituration of Mercurius Sol. Give 1 tablet every hour or two. This is to be used when the patient is bilious looking and passes mucus and blood and has pain at stool which is not relieved by passing of the stool.

Use the third trituration of Nux Vomica, 1 tablet every hour or two, when there is much pain before the stool but is relieved by the passage of the stool.

When there is a throbbing headache give the third dilution of Bella-

donna. Put 10 or 15 drops into half a glass of water and give 1 or 2 teaspoonfuls every 1 to 3 hours.

Nursing and Diet.—Mild continuous counter irritation by means of a spice poultice over the abdomen is very good. The spice poultice consists of equal parts of powdered nutmeg, allspice, cloves and cinnamon. These are to be moistened with warm water or vinegar. A mustard plaster is also good. Use one or two parts of mustard to 2 or 3 parts of wheat flour. This produces continuous but not severe counter irritation.

For a diet the patient may have milk if it does not curdle. Beef juice or beef or chicken broth may be given but not to a very young infant. If the child is older you can add strained barley or wheat gruel. The digestion of these can be aided by the use of liquid pancreatin or liquid taka-diastase.

APPENDICITIS.

Description and Location of Appendix.—The appendix is a small tube a little larger than a goose quill and from 2 to 4 inches long. It is situated in the right side of the abdomen and rather low down. It can be located about midway between the navel and the point of the hip bone. One end is closed and the other opens into the cæcum or beginning of the large bowel. Inflammation of the appendix is called appendicitis.

SYMPTOMS.—The most constant symptom is pain in the right side of the abdomen. The patient may not be able to locate the pain exactly but pressure with the hand will usually show the right location. The pain is usually severe and sharp and in some cases is agonizing. Usually it comes on suddenly and for this and other reasons it may be confused with kidney or gall stone colic. If the pain of appendicitis stops suddenly it is not a good sign for it indicates the formation of pus in or near the appendix.

Next to the pain the most important symptom in appendicitis is a tightness or hardness of the muscle on the right side of the abdomen. The fever is very high and there is often vomiting. After a time a swelling may appear in the lower side of the abdomen.

How to Tell Appendicitis from Renal and Gall Stone Colic.—In renal or kidney colic the pain runs down into the scrotum or groin. In hepatic or gall stone colic the patient has generally had previous trouble with gall stones.

TREATMENT.—

Preventive Treatment.—Keep the bowels open.

Allopathic Treatment.—Absolute rest in bed. Apply an ice bag over the appendix. Give no food or drink by the mouth, give no purgatives and no morphine unless absolutely necessary. Use a bed pan if the bowels move for the patient must not get out of bed. If the pulse is excitable a little aconite may be given.

Homeopathic Treatment.—Absolute rest in bed. The medicines used are the second dilution of Aconite, the third dilution of Belladonna, the second dilution of Bryonia, the third trituration of Arsenicum and the third trituration of Mercurius. Directions for the preparation and doses of these medicines will be found under "Homeopathic Medicines" in the Nursing Department.

Operations.—Great difference of opinion exists as to this (See article on Operations). Dennis says, "The plan of allowing the simple catarrhal cases which are doing well after 36 hours to recover without immediate operation and relegating them subsequently to the group known as interval cases, and

the prompt operation after 36 hours when the cases are not doing well, seems to hold out the best prospect of recovery. The pendulum has swung too far toward indiscriminate operation. But now the introduction of the interval operation has brought the pendulum back to swing within the proper limits.

Nursing and Diet.—As a rule the patient would vomit any food taken the first few days. Liquid food can be given with a syringe and injected into the bowel. When food can be taken it must be liquid like milk, broths, etc. See that the patient remains quiet and use the bed pan as he must not get up for any reason.

TELESCOPING OF THE BOWELS.

Intestinal Obstruction—Intussusception.

Description.—Intussusception is a telescoping of one section of the bowel into another. A section of the bowel seems to slip back into the adjoining section and thus closes it and prevents the passing of the contents of the bowels.

Causes.—Obstruction of the bowels is caused by the packing of the contents of the bowels, by adhesions, or by tumors.

Symptoms.—There is pain in the abdomen, vomiting in the first stages and absolute constipation. The pain soon becomes constant and agonizing and the vomiting is more severe and constant after several hours. The first material vomited is gastric and mucus; the next material contains bile and then there is vomiting of the contents of the bowels. This is probably due to the putrid decomposition of the stagnated contents of the bowels above the obstruction.

Treatment.—Stop all food and wash out the stomach every six hours by giving large quantities of water. Give high rectal injections with a fountain syringe. Use a warm saline solution of olive oil and the injection should be copious, steady and regularly repeated. An operation will be necessary if other means fail.

ACUTE PERITONITIS.

Inflammation of the Peritoneum.

Description.—The peritoneum is a membrane lining the walls of the abdomen and covering or enclosing the intestines. Peritonitis is inflammation of the peritoneum.

Causes.—Most cases are due to infection. The two great causes are appendicitis and disease of the fallopian tubes.

Symptoms.—There is severe pain in the abdomen and the wall of muscles of the abdomen is rigid and sensitive to touch. The patient has a very anxious face. The pulse is rapid and there is frequently vomiting. The abdomen soon becomes extremely tender and the patient cannot bear the weight of the bed clothes upon him. He usually lies upon his back with his knees drawn up and supports the bed clothes over the abdomen with his hands. He is afraid lest the bed be jarred. The thirst is fearful. As the disease progresses the abdomen becomes full and hard. The face is anxious, pinched and peaked; the eyes sunken; the nostrils thin and drawn; the skin livid and pale and the tongue dry and parched. The patient breaks into a cold sweat and has watery diarrhea. As the end approaches the pulse is exceedingly wiry. In septic cases the pain is absent in the majority of cases. It runs a rapid course. As a rule in well developed cases the patient does not live long.

TREATMENT.—

Allopathic Treatment.—Find the cause and treat accordingly. Hypodermic injections of morphine may be necessary to relieve the pain but enough morphine should not be given to mask the symptoms. An operation may be resorted to in some cases. Apply a counter irritant over the abdomen. In some cases leeches are used and in others a light mustard plaster. The thirst is relieved by small pieces of ice; or, better still, by rinsing the mouth with glycerine, 1 part; and water, to which has been added a few drops of lemon juice, 3 parts. Liquids increase the vomiting. Fomentations are good in some cases. Keep the kidneys working well.

Homeopathic Treatment.—The second dilution of Aconite is used in the first stages and the second dilution of Bryonia is used afterward. When the patient is very thirsty, restless, vomits, and has a watery burning diarrhea, the third trituration of Arsenicum is used. When there is much sticky and bad smelling sweat and painful diarrhea, then the third trituration of Mercurius is the medicine to use.

DROPSY OF THE ABDOMEN.**Ascites.**

Description.—This is a serous or watery fluid in the abdomen.

Causes.—The causes are diseases of the liver (cirrhosis), tuberculous peritonitis, growths of the ovaries and malignant growths obstructing the circulation.

Symptoms.—There is first an enlargement of the lower part of the abdomen and the sides.

Treatment.—If it is due to cirrhosis of the liver little can be done for it. Tapping may be resorted to. If it is caused by heart disease treat with rest, digitalis, and saline purges. If caused by a tumor of the ovary or other malignant growth an operation should be performed early.

FALLEN BOWEL.**Prolapsus Ani.**

Description.—This is when a part of the bowel hangs out.
TREATMENT.

Manual Treatment.—Place the patient on his side, oil the tumor well, and then press it back gently with a soft towel. If this fails, cover the finger and introduce it gently within the bowel, gently pressing the tumor up.

General Treatment.—Remove the cause if possible. Give iron tonics and cod liver oil. This will regulate the bowels. Stools should be passed with the child lying on its side and when the bowels come out, push them gently back and keep them in place with a bandage. Keep the buttocks together with a strong strip of adhesive plaster, in children.

FISSURE.

Causes.—This is an ulceration of the anus which is sometimes caused by piles and by constipation.

Symptoms.—The pain after evacuating the bowels continues for several hours instead of for a short time as in piles.

Treatment.—Open the bowels daily with a mild laxative like castor oil. Afterwards wash the parts with soap and water and apply the following ointment. Take 4 grains of calomel, 2 grains of powdered opium, 2 grains of

extract of belladonna and 1 dram of simple ointment. Mix these thoroughly, spread the ointment on a piece of lint and put on the fissure. Also, you can touch the ulcer and fissure with a sharp pointed stick of nitrate of silver once a day or once every other day.

ISCHIO-RECTAL ABSCESS.

This causes severe pain. It is felt on one side of the anus, or opening of the lower bowel, as a hard brawny mass, having, as it softens, a red surface. It may burst externally or it may burst into the bowel.

Treatment.—Apply a poultice and open the abscess. Introduce the finger or curette and scrape it out. Afterwards wash it out thoroughly with some antiseptic solution and stuff it full with gauze and keep washing it out and packing with gauze until it is thoroughly healed. Early and free opening will prevent a fistula in the bowel.

FISTULA OF THE BOWEL.

Usually this has one opening in the bowel (rectum) and one in the skin as the result of the abscess. The more severe forms are outside the sphincter, the inner opening being from $\frac{1}{2}$ to $1\frac{1}{2}$ inches from the edge of the anus. Operation is the treatment if it bothers much, but it is surprising how many of them do not bother much. Keep the bowels open with mild laxatives.

TUMORS OF THE RECTUM.

Cancer is generally of the epithelial form. The only treatment is operation. Sometimes there are warty growths and they may be of large size. They may not bother but if they do they should be taken off.

EXTERNAL PILES.

These are situated about the anus and outside the bowel.

Causes.—They are due to a varicose or congested condition of the veins near the surface and about the anus. They are bluish, soft, round lumps outside the anus. Sometimes they are large, full and inflamed and when the bowels move they cause great pain. They generally subside in a few days.

Treatment.—Overcome the constipation with senna and sulphur, compound licorice powder, cascara, etc. For the pain use equal parts of chloroform and sweet oil. Apply with a cloth. (See "People's Home Remedies for Piles.")

INTERNAL OR BLEEDING PILES.

Description.—These are situated within the bowel and are more serious and troublesome than the external ones.

Symptoms.—There is constant bleeding from the rectum and this bleeding is increased by movements of the bowels. Sometimes the piles protrude and drag the bowel with them, thus causing falling of the bowel. Sometimes when they protrude they are held by the sphincter muscle and do not go back and then they cause great pain. They may then slough and produce a natural cure. This is quite painful.

Treatment.—Overcome the constipation but do not cause diarrhea. Use compound licorice powder, pills, or an enema if the patient can stand it. Wash and grease the protruding piles after a bowel movement and then carefully return them.

Sometimes an operation is necessary. Suppositories are good. Pine-

oline salve put on the pile internally and externally is good. Chopped raisins and tobacco mixed with lard is also a good remedy. Touch internal piles with tincture of iodine.

Take the inner bark of white oak, boil in water until it is quite strong, mix with vaseline, and apply to the piles both externally and internally. (See "People's Home Remedies for Piles.")

ITCHING PILES.

Causes and Symptoms.—The itching may be caused by pin worms, small external piles or eczema. In some cases it is a nerve trouble and there is no local inflammation to be made out, the skin about the anus having a dead, white, parchment-like look. These cases are difficult to cure. The irritation is worse at night and the itching is almost unbearable.

TREATMENT.—

Get rid of the causes such as thread worms, etc. If the part is too moist, use soothing applications such as a solution of lead. If the parts are too dry, use oil of cad. Keep the buttocks apart and this may be done with a pledget of fine oakum.

Equal parts of pineoline and Webb's ointment is also good for some cases. Another good remedy is a mixture of $\frac{1}{2}$ ounce of unguentum hydrargyri ammoniat, 2 drams diachylon, 1 dram anthrasol, 6 grains carbolic acid and 1 dram of unguent aqua rosæ.

For neurotic cases, or those caused by nervous trouble, keep the bowels regular, stop liquors and tobacco and live plainly. Fine oakum may be applied with citrine ointment, oleate of mercury, or carbolized vaseline. (See "People's Home Remedies for Piles.")

HEMORRHOIDS.

For painful piles use the following prescription. Take $\frac{1}{2}$ dram of extract of opium, 5 to 8 grains of cocaine hydrochlorate, 15 grains of menthol, and 1 ounce of ungt. zinc oxide. Mix and apply to the piles occasionally. This is also good for fissure and eczema. (See "People's Home Remedies for Piles.")

PEOPLE'S HOME REMEDIES FOR PILES.

1. **Horse Chestnuts and Lard.**—Remove the shells from 6 horse chestnuts, or buckeyes; chop them fine, add enough lard to just cover the nuts; and let them stand for an hour near the fire. Strain, and when cool apply the lard or ointment to the parts twice a day. This is a very valuable remedy for piles.

2. **Butter, Turpentine and Salt.**—Make an ointment by taking 1 tablespoonful of fresh butter and 2 teaspoonfuls of turpentine, adding a little salt. Several times a day apply this ointment either outside or inside the rectum. This is a very fine remedy for piles and is well worth trying.

3. **Tar and Lard.**—Wash the parts twice a day with castile soap and water and apply an ointment made of two tablespoonfuls of tar and eight rounded teaspoonfuls of lard.

4. **Alum and Lard.**—Make an ointment of $1\frac{1}{2}$ ounces of lard and a dram of finely powdered alum. This is a very fine pile remedy.

5. **Tannic Acid, Carbolic Acid, Borax and Vaseline.**—Apply the following ointment to the bowel twice a day. Take tannic acid, 15 grains; carbolic acid, 20 drops; pulverized borax, 10 grains and vaseline, 2 ounces.

Apply to the parts two or three times daily and take cream of tartar or some other mild laxative.

6. **Indian Pile Ointment.**—Take, say a teacupful of hog's lard, more or less; put into a flat tin or dish and take two bars of lead, flattened a little, and rub the lard with the flat ends and between them until it becomes black or of a dark lead color. Then burn equal parts of cavendish tobacco and old shoe leather, in an iron vessel, to a charred powder and mix into the lard until it becomes a thick ointment. Use once or twice a day as an ointment for the piles. It is a never failing cure.

7. **Sulphur and Lard.**—For blind or bleeding piles apply an ointment made by taking 1 dram of sulphur and 2 ounces of lard. Rub this mixture between two flat pieces of lead until the ointment is blackened.

8. **Tobacco.**—Tobacco ointment is a great pile remedy.

9. **Raisins, Tobacco and Lard.**—Equal parts of chopped raisins, tobacco and lard makes one of the best remedies known for piles.

10. **Witch Hazel, Apple Tree Bark, White Oak Bark and Lard.**—Make a decoction of witch hazel, apple tree bark, and white oak bark, and mix with lard to make a salve. This is very good for piles.

11. **Solomon's Seal.**—Bruise some Solomon's seal root and apply to the piles.

12. **Cranesbill.**—Make a strong decoction of cranesbill and use as an injection. It should be retained in the bowel for some time.

13. **Cream of Tartar, Sulphur, Etc.**—Take 1 ounce each of cream of tartar and sulphur and 2 ounces of confection of senna. Add enough syrup of ginger to make a paste. Of this take a piece the size of a small hickory nut often enough to cause a natural movement of the bowels once a day. Apply cold cream, tallow or lard locally to relieve the irritation.

14. **Cold Water and Witch Hazel.**—It is sometimes beneficial to wash with cold water or take cool sitting baths. If there is much bleeding give injections of cold water or witch hazel.

15. **Poultice.**—If there is much inflammation apply a poultice made of sulphur, stramonium leaves and slippery elm bark.

16. **Cream of Tartar and Molasses.**—A teaspoonful of cream of tartar taken in a little molasses is an excellent remedy. It keeps the bowels regular.

17. **Sulphur and Cream of Tartar.**—Take sulphur and cream of tartar in equal parts. A teaspoonful once a day is very effective. While using this remedy it is also well for the patient to drink a tea made of mullein and elder.

18. **Hops, Tansy, Poke Leaves. Etc.**—In blind piles a cure is often effected by sitting over a hot decoction of hops, tansy, poke leaves or other bitter herbs until the parts are well steamed. A poultice of equal parts of lobelia leaves and elm bark is also good as is also a poultice of poke leaves.

19. **Witch Hazel.**—Take a teaspoonful of witch hazel every 3 or 4 hours and at the same time bathe the external parts freely with the same remedy. This is very effectual in many cases.

DISEASES OF THE LIVER.

Including Disease of the Bile Passages, Gall Bladder and Pancreas.

Description and Location of Liver.—The liver is situated high up on the right side and its lower border corresponds to the lower edge of the ribs on the right side. It is of a dark red color. It measures 6 or 7 inches from front to back and about 12 inches from side to side and is about $4\frac{1}{2}$ inches thick in the thickest part. It is divided into two lobes, the right lobe being much the larger. The liver weighs between 3 and 4 pounds and is the largest gland in the body.

Description and Location of Gall Bladder.—The gall bladder is on the right side. It is a pear shaped sac about an inch in breadth, four inches long, and holding a little more than an ounce. It is a storage place for the bile. The ducts or tubes leading from it join those leading from the liver and enter the bowel about $3\frac{1}{2}$ inches below the stomach.

Description and Location of Pancreas.—The pancreas lies behind and below the stomach and belongs to the digestive system. It furnishes pancreaticin which aids in digestion. The pancreas is 6 or 8 inches long, about $1\frac{1}{2}$ inches wide and weighs between 3 and 6 ounces.

INFLAMMATION OF THE LIVER.

Liver Abscess.

Causes.—This may be due to injuries such as knife wounds. etc.; to dysentery; or to inflammation of the portal vein or bile ducts. Tropical abscess is a disease found in India.

Symptoms.—There is enlarged liver, fever, and pain. The dyspeptic symptoms are marked. The fever runs high and the patient is yellow and generally sweats.

TREATMENT.—Keep up the strength with good foods and with iron and arsenic and if it is a single abscess it should be opened and drained.

PEOPLE'S HOME REMEDIES.—

1. **Warm Bath and Hot Drinks.**—For mild cases of inflammation of the liver have the patient take a warm bath, go to bed and take warm drinks until he perspires freely.

2. **Dandelion.**—Take extract of dandelion in 5-grain doses 4 times a day. It can be made into pill form and is an excellent tonic for the liver.

Physician's Remark.—Dandelion is an alterative and also a laxative.

3. **Buttermilk.**—Liver complaint may be remedied by drinking a cupful of buttermilk every day.

4. **Decoction of Dandelion.**—Make a strong decoction of dandelion and take a teaspoonful twice a day. Dandelion is one of the best liver remedies known and is much used by physicians.

5. **Salt Water and Lard.**—If the complaint is attended with a costive condition of the bowels give an injection of 1 pint of warm water, 1 tablespoonful of salt and 1 teaspoonful of hog's lard.

Physician's Remark.—This relieves the congestion of the liver by removing the constipation.

CIRRHOSIS OF THE LIVER.

Description.—This consists of an overgrowth of connective tissue in the liver. Sometimes it finally shrinks and in other cases it becomes enlarged. This tissue presses upon the liver tissue and interferes with the proper action of the liver.

Causes.—The shrinking kind is caused by chronic alcoholism and lead poisoning.

Symptoms.—There is stomach trouble and dropsy.

Treatment.—If it is caused by alcohol the patient should quit drinking alcoholic liquors. Each morning the bowels should be moved with Hunyadi or Carlsbad water and a few drops of Fowler's solution should be taken for the nausea and lack of appetite. During meals the patient should take the following. With each meal take 2 grains each of pancreatin, taka-diastase, and baking soda. Tapping is the best thing for the dropsy.

ENLARGEMENT AND HARDENING OF THE LIVER.

Hypertrophic Cirrhosis.

Symptoms.—The liver is enlarged and frequently extends below the navel. Jaundice is generally present.

Treatment.—There is no cure for it.

CIRRHOSIS OR HARDENING OF THE CAPSULE.

This capsule is the connective tissue surrounding the artery, vein and duct of the liver. The disease is very rare. It frequently results from other diseases.

AMYLOID LIVER.

This is caused by a starch-like deposit in the liver. It generally comes from other diseases.

TUMORS OF THE LIVER.

Cancer of the Liver.

Cancers of the liver are very rare and generally come from cancers of other parts. They are fatal.

ACUTE YELLOW ATROPHY OF THE LIVER.

Description.—In this disease there is fatty degeneration of the liver and the patient has violent headache and delirium. Atrophy means "dwindling." The disease is very rare.

Causes.—The cause is not known. The disease is more frequent in women than in men.

Symptoms.—There is jaundice, severe headache, vomiting and finally delirium, muscular tremors, convulsions, and death. Death is nearly always the result. I know of one case where the disease followed an operation in another part of the body.

JAUNDICE.

Catarrh or Inflammation of the Bile Ducts.

Inflammation sometimes entirely closes the bile ducts and then we have jaundice.

Causes.—The disease nearly always arises from inflammation of the duodenum, or first part of the intestine; from cold; heavy eating and drinking; or, from a malignant growth. Gall stones, fright, anger and pneumonia are other causes.

Symptoms.—These vary greatly. They are well marked in some persons and in others so slight that they are not noticed. Sometimes the patient is wretchedly ill, has headache, and is very weak. The stools are like putty and the urine like porter. The pulse and respiration are remarkably slow and the temperature may be below normal or it may be up to 102 degrees or more. In older persons and particularly if the jaundice develops slowly there is a possibility of a malignant growth being present. If there is a distinct enlargement of the gall bladder it is probably cancer. In other cases, when jaundice comes on suddenly, the cause may be gall stones and in such cases the patient has generally been previously troubled with gall stone colic.

TREATMENT.—

Allopathic Treatment.—Keep the kidneys acting freely by giving largely of vichy water and 5 grains of carbonate of potash may be added if necessary. For constipation give from 20 grains to a dram of sodium phosphate in half a glass of water every hour or two until the bowels are thoroughly moved.

Homeopathic Treatment.—Give the third trituration of *Mercurius Sol.* Take a tablet every 1 to 3 hours. Tincture of *Myrica Cerifera* (bayberry) is also a splendid remedy. Give 2 drops every 2 or 3 hours.

A few years ago I had a case of jaundice that did not yield to the regular treatment. I was in the hospital at the time and spoke of the case to Dr. Hinsdale, Dean of the Department, to whom I was then an assistant. He advised me to use the tincture of *Myrica Cerifera* in 1 to 3-drop doses every few hours. I tried the remedy and the patient was helped immediately. Dr. Hinsdale had found this remedy useful in his previous practice though it is not mentioned in the books for this trouble. The tincture of *Myrica Cerifera* is made from the bark of bayberry. If desired a tea may be made of this bark and used in the place of the tincture.

Nursing and Diet.—The patient should have rest. Apply hot water cloths over the liver and renew as rapidly as they cool. Keep the kidneys in good working order. Avoid all fat foods and rich milk is not very good. Eat nutritious broths, thickened with barley or rice, with a little salt added. These should be partly digested with pancreatin.

PEOPLE'S HOME REMEDIES.—

1. **Thoroughwort Tea and Baking Soda.**—In case of jaundice, drink freely every day of thoroughwort tea. Baking soda taken before meals is also a good remedy.

2. **Barberry and Cider.**—A valuable remedy for jaundice is the inner bark of barberry steeped in cider.

3. **Wild Cherry Bark, Sheep Laurel Leaves, Etc.**—Take 1 ounce of coarse powder of wild cherry bark, sheep laurel leaves, barberry bark, and bitter root; put into 2 quarts of pure cider; mix, and let stand for several hours. Give a teaspoonful 3 or 4 times a day.

Physician's Remark.—The wild cherry assists in digestion, the laurel and barberry are alteratives and act upon the liver, and the bitter root is a cathartic and diuretic.

4. **Peach Leaves.**—Make a strong tea of peach leaves and drink half a pint daily.

5. **Wild Cherry and Peach Tree Bark.**—With gin make some bitters of wild cherry bark and the bark of the root of the peach tree and drink freely several times a day.

CHRONIC JAUNDICE.

Causes.—This is commonly due to obstruction in the ducts by gall stones, growths, or stricture.

Symptoms.—The patient has fever, sweats, and persistent jaundice.

TREATMENT.—

Remove the cause if possible and relieve the constipation. Apply tincture of iodine over the liver. This must be kept up for a long time. Fever indicates pus. An operation may be necessary to remove the obstruction. Milk and fatty foods are hard for a patient with this disease to digest.

SUPPURATION OF THE BILE DUCTS.

Symptoms.—There is fever, jaundice and an enlarged and very tender liver. The patient sweats profusely and loses flesh rapidly because of the pus. There is not much severe pain.

Treatment.—An operation is necessary to let the pus out.

ACUTE INFLAMMATION OF THE GALL BLADDER.

Acute Cholecystitis.

Cause.—Gall stones.

Symptoms.—The symptoms vary in severity from a slight discomfort and soreness to violent and alarming pain and collapse. There is tenderness on the right side about the region of the gall bladder. The pain is felt under the ribs. Fever is often ushered in by a chill. When it develops suddenly, as it frequently does, the patient may be seized with sickness at the stomach and vomiting. There is threatened collapse and a rapid pulse. The abdomen is distended and its walls tight and hard. Gall stones may be mistaken for appendicitis. When the patient has gall stone colic he has generally been troubled with gall stones before.

Treatment.—An operation will probably be required; or, if temporary measures are used, the patient should rest in bed and there should be counter-irritation over the region of the gall bladder. Give salts. Morphine is not often used but it may be necessary for the terrible pain.

GALL STONES—CHOLELITHIASIS.

This is when there are gall stones in the gall bladder or bile passages.

Symptoms.—Many never know they have this disease. It is commonly met with after the 40th year and more than three-fourths of the cases occur in women. Only about five per cent. suffer from distinct symptoms due to this cause. Symptoms of biliary colic usually consist of severe pain which amounts to agony in some cases. Occasionally the pains are very moderate. The patient vomits and sweats profusely and often after an attack a slight jaundice may appear. As a rule the attacks last but a few hours.

Treatment.—Give a hypodermic injection of $\frac{1}{4}$ grain of morphine with $\frac{1}{120}$ of a grain of atropine. If the first injection does not give relief it may be repeated without the atropine in 15 or 20 minutes. Use olive oil regularly in large doses for a long time.

PEOPLE'S HOME REMEDIES FOR GALL STONES.—

1. **Bark of Sweet Apple Tree.**—Perhaps the best remedy known for

gall stones is made from the bark of the root of the sweet apple tree. The bark should be taken early in the spring or late in the fall when there is no sap rising in the tree. Put half a pound of the bark into a large bottle containing a pint of alcohol and let it stand for two or three weeks, occasionally shaking it so that all the strength is drawn out. Of this take a teaspoonful 3 or 4 times a day in a little sweetened water.

2. **Olive Oil.**—Take large doses of olive oil. Continue until cured.

3. **Dover's Powder.**—Give full doses of Dover's powder to relieve the spasm caused by gall stones.

MALIGNANT GROWTHS IN GALL BLADDER.

There are sometimes malignant growths in the gall bladder as there are in other organs. It will not be necessary to treat of them.

JAUNDICE OF NEW BORN INFANT.

Icterus Neonatorum.

This usually appears the third or fourth day.

Homeopathic Treatment.—Give the third trituration of *Mercurius*. Give 1 tablet every three hours.

INFLAMMATION OF THE PANCREAS.

Pancreatitis.

This disease is hard to diagnose. The acute disease is a very serious thing. Malignant growths also occur in the pancreas.

BILIOUSNESS.

Congestion of the Liver.

Symptoms.—There is some headache, a yellow coated tongue, a bitter taste in the mouth, and the whites of the eyes may be of a yellowish color. There may be sickness at the stomach, vomiting and constipation. The liver may be slightly swollen and a little tender to the touch.

TREATMENT.—

Preventive Treatment.—To keep off biliousness mix 15 grains of extract chirate, 4 grains podophyllin, 8 grains euonymin and 8 grains leptandrin; make into 20 pills and take one at night.

Herb Remedies.—A tea made of golden seal is good for a torpid liver. Also a tea made of culver's root is good for the same thing. Use the dried root in making the tea and take a teaspoonful every two hours.

Take equal parts of blue flag root, mandrake, and prickly ash bark. Grind all together and give 5 to 10 grains every 2 or 3 hours. Do not take enough to physic.

Allopathic Treatment.—If the stools are light, give $\frac{1}{6}$ grain of calomel in powder every 15 minutes until 6 doses have been taken. Follow in 4 hours with salts. Give podophyllin if the stools are dark. The dose is $\frac{1}{6}$ of a grain. If the attack is sudden give salts so as to sweep out poisonous food, etc. If the face is flushed apply a mustard plaster to the nape of the neck.

Or, you may give phosphate of sodium in from 20 to 60 grain doses every hour or two until the bowels move freely.

Homeopathic Treatment.—You can alternate the third trituration of *Nux Vomica* and the third trituration of *Mercurius* every hour for one day.

This often cures without moving the bowels. Use an enema if you do not wish to take medicine to move the bowels.

Nursing and Diet.—When one is bilious the best plan is to go a day, if possible, without eating anything. Drink plenty of water either hot or cold. You will not feel like eating. Biliousness is frequently caused by over eating or eating or drinking improper things. Stimulating foods and drinks sometimes produce it. The bowels should move freely and when one has a torpid liver attention must be given to the bowels. One can not feel well when the bowels are constipated and especially if they have generally been regular.

PEOPLE'S HOME REMEDIES.—

1. **Fasting.**—You will avoid biliousness by fasting two or three meals whenever the taste is bad or the tongue coated. This treatment would save many doctor bills.

Physician's Remark.—This allows the stomach and liver to rest and thus the congestion is relieved. This is very good advice.

2. **Lemon Juice.**—Drink lemon juice in a glass of water once or twice a day. Do not sweeten.

3. **Hot Water and Lemons.**—Drink a cup of hot water before breakfast every morning and eat lemons frequently.

Physician's Remark.—The hot water washes out the stomach.

4. **Tomatoes.**—For some people plenty of tomatoes either raw or canned are good.

5. **Licorice.**—Take a teaspoonful of licorice powder in a little cold water before going to bed.

Physician's Remark.—Licorice is laxative and regulates the bowels of constipated people and in this way it is good for biliousness.

6. **Lemon Peel, Cream of Tartar, Loaf Sugar, Etc.**—For bilious fever sponge the patient two or three times daily with either warm or cold water as he desires and give the following drink. Take 2 ounces of bruised lemon peel, $\frac{1}{4}$ ounce of cream of tartar, 2 ounces of loaf sugar, and $1\frac{1}{2}$ pints of boiling water. Vomiting may be stopped with equal parts of milk and lime water.

Physician's Remark.—Lemon acts upon the liver and cream of tartar on the bowels and kidneys.

7. **Diet.**—A plain diet of bread, milk, oatmeal, vegetables and fruit with lean meat and fresh fish, is best. Exercise in the open air. The victim of an acute attack will be righted by—first, abstinence; second, porridge and milk; third, toast, a little meat, fish and ripe fruit; thus coming to solid food gradually.

Physician's Remark.—This is good advice to follow as to diet.

DISEASES OF THE KIDNEYS AND BLADDER.

DROPSY.

Edema.

This was once thought to be a disease but it is only a symptom of many diseases of the kidneys, of other organs and of the circulation. It may be either general or local. General dropsy is called "anasarca." When there is liquid in the abdominal cavity it is called "ascites;" in the chest, "hydrothorax;" and in the brain cavity, "hydro-cephalus."

Treatment.—When it comes from disease of the heart you must treat that organ. An infusion of digitalis is then generally good. Ascites, or liquid in the abdomen, may be due to diseases of the ovaries, liver, malignant growth, etc. The malignant growth should be removed if possible. Dropsy may be due to the kidneys, scarlet fever and heart disease. So the disease instead of the dropsy must be treated.

PEOPLE'S HOME REMEDIES.—

1. **Broom Tea and Cream of Tartar.**—Pour a pint of boiling water on a handful of the common herb called broom. The green tops of the broom should be used and the whole should be placed near the fire for several hours. Give a teaspoonful of cream of tartar to keep the bowels open.

Physician's Remark.—The broom increases the flow of urine and does good in this way.

2. **Milk Weed, Horseradish, Elder Bark, Etc.**—Here is an excellent prescription which was taken from an old medical work and it will be found very effective in dropsy of the chest. Take 1 ounce each of milk weed root, horseradish, mandrake root, black elder bark, juniper berries, root or bark of the dwarf elder, and bark from the root of bitter sweet. Add $\frac{1}{2}$ ounce of mustard; press all together and pour on 1 gallon of hard cider. Take a wineglassful on an empty stomach three times a day.

Physician's Remarks.—This is quite an active diuretic (acts on the kidneys) and causes an increased flow of urine. Some of the ingredients also act on the liver and bowels.

3. **Parsley Root.**—A tea made of fresh parsley root is often used to advantage for dropsy of the abdomen.

Physician's Remarks.—This is slightly laxative but it does the work by its greater action on the kidneys.

4. **Mustard Seed, Juniper Berries, Ginger, Etc.**—Take half an ounce each of mustard seed, bruised juniper berries and ginger and an ounce each of parsley root and horseradish. Steep in a quart of old cider and take a wineglassful 3 times a day.

5. **Corn Silk, Dandelion, Etc.**—The following is good in dropsy of the lower extremities from heart disease. Fluid extract of corn silk, $1\frac{1}{2}$ ounces; fluid extract of dandelion, 3 ounces; infusion of digitalis, 3 ounces; mix, and take 2 teaspoonfuls in water every 3 to 4 hours.

6. **Corn Silk, Cream of Tartar and Sweet Spirits of Nitre.**—This prescription is for dropsy of the lower extremities caused by heart disease. Take

3 ounces of fluid extract of corn silk, 3 drams of cream of tartar, 2 ounces of sweet spirits of nitre; mix, and take 2 teaspoonfuls every 2 to 3 hours.

7. **Dandelion Tea.**—Wash and cut up a large double handful of dandelion roots and let them stand for a couple of hours in boiling water. During the day the patient should take 2 or 3 cupfuls of the decoction.

CONGESTION OF THE KIDNEYS.

Acute Hyperemia.

Causes.—It is caused by medicines like cantharides, turpentine, copaiba, cubeba, anæsthetics and especially ether. Injuries to the back and the chilling of the skin also cause it.

Symptoms.—There is a tired feeling, pain in the back and a slight fever. The urine is scanty, dark in color, and of a high specific gravity. The patient generally improves before long.

TREATMENT.—

Allopathic Treatment.—Absolute rest in bed. Give 2 teaspoonfuls of solution of acetate of potash with 1 teaspoonful of sweet spirits of nitre at each dose. Give every two hours.

Homeopathic Treatment.—Give the second dilution of Aconite at the beginning. Put 10 or 15 drops into a glass half full of water and give 1 or 2 teaspoonfuls every 1 to 3 hours.

Common Remedies.—Poland water, watermelon seed tea, pumpkin seed tea and flaxseed tea are all good.

CHRONIC CONGESTION OF THE KIDNEYS.

This frequently comes with diseases of the heart, lungs, and liver and sometimes follows the acute form and is usually more common.

Symptoms.—Albumin found in the urine is a prominent symptom. The amount of urine passed may be scanty.

TREATMENT.—Treat the conditions that cause it. The patient should have absolute rest in bed. Apply hot compresses over the kidneys. Cupping is another treatment.

Cupping.—Cupping is either wet or dry. Dry cupping can be done with a small tumbler or a wine glass. Moisten the inside with a little alcohol or whiskey, light this, and at once apply, holding it firmly over the part. As the air in the glass cools it will “suck” owing to the contraction of the air. This draws blood to the parts. Remove the glass by tilting it while pressing the skin down on one side. For wet cupping the skin should first be congested with dry cupping, then parallel incisions, or cuts, should be made in the skin with a lancet point and at once the cup should be applied as before. When the cup has ceased to fill with blood, remove it and empty it and apply again until enough blood has been drawn. Then wash the parts with some mild antiseptic solution and cover with dry clean cloths.

Allopathic Treatment.—Give the fluid extract of apocynum cannabinum in from 5 to 10-drop doses two or three times a day.

Homeopathic Treatment.—Give the third trituration of Apis Mel. when there is scanty and straw colored urine.

Give the third trituration of Arsenicum if there is much thirst and restlessness.

Give the third trituration of Terebinth if bloody urine is passed.

ACUTE BRIGHT'S DISEASE.

Acute Nephritis—Inflammation of the Kidneys—Diffuse Inflammation.

Causes.—Exposure to wet and cold, extensive burns, scarlet fever, diphtheria, pneumonia, pregnancy, and arsenic and corrosive sublimate poisoning.

Symptoms.—Chills, and frequently convulsions, mark the onset. The fever is from 101 to 103 degrees. Dropsy may soon be a prominent feature. The urine contains albumin. The face is puffed and the ankles are swollen, especially when it comes from scarlet fever and, perhaps, from pregnancy. The result is usually favorable but is worse in young children.

Treatment.—The patient should rest and take salts for the bowels. He should drink milk and lots of water if there is no dropsy. He should live upon a liquid diet with no spices like pepper or mustard in the food. Avoid the cold and damp, and sweat the patient if necessary. Place him on a chair in a warm room with a blanket pinned about the neck and hanging to the floor on all sides. Put a hot brick in a pail of water underneath the patient. Or, you can admit steam from a kettle under a raised cover at the foot of the bed. Do not burn the patient. If the patient is not too weak you can use the corn sweat as described in the Nursing Department.

CHRONIC BRIGHT'S DISEASE.

Chronic Nephritis.

Description.—There are two kinds of this disease. In the parenchymatous kind there is inflammation of the kidney surface proper and the kidney is enlarged. In the interstitial kind the connective tissue of the kidney is inflamed and the kidney is contracted.

Symptoms of First Kind.—It may follow the acute Bright's disease and the symptoms abate a little. There is anemia, dropsy, and albumin in the urine and these persist and gradually become more marked. Yet it may come on stealthily with headache and stomach and bowel disturbance. There is less urine and it is of a darker color. It has a heavy sediment and contains albumin and casts. There are eye troubles and more or less dropsy. The face is pallid, the skin of a greasy yellow color, and the breathing difficult. The parts pit on pressure, the heart acts bad, the pulse is rapid, and the patient is sleepy during the day and restless at night. The urine is scanty and its specific gravity high or about 1025.

Symptoms of the Second Kind.—This is found in busy men who say they are all right. The symptoms show late. The urine is increased in quantity and the amount of albumin is not great. There is frequently dimness or disturbance of sight but not so much general dropsy as in the first kind. Acute attacks of uremia and heart palpitation are not infrequent. Finally there is more albumin and the heart is weak. The specific gravity of the urine is low; 1005 to 1012.

TREATMENT.—The treatment is largely hygienic.

Diet.—Drink skimmed milk but not too much. Unskimmed milk is the best if it can be taken. Drugs are of little value. Build up your patient with proper food and care. Watch the stomach and bowels. Use very little beef. Vegetables, starchy and fresh soups, boiled or broiled fish, raw oysters, clams, chicken, fat bacon, cereals, stewed and raw fruits and weak tea and coffee are good.

General Treatment for all Kinds of Bright's Disease.

Diagnosis.—There is albumin in the urine with casts of the urine-bearing tubules. The blood vessels are somewhat thickened. There is a greater second sound of the heart in association with the symptoms mentioned.

Bright's disease is a very serious disease but not necessarily fatal. The treatment of the conditions depends upon the variety of Bright's disease which has caused them and the peculiarities of the person suffering from the attack. When uremia comes on in acute Bright's disease from scarlet fever, put hot compresses across the small of the back and if there is no diarrhea give enough epsom salts to produce several watery passages from the bowels.

After this has been accomplished give 5 to 10 grains of citrate of potassium dissolved in Poland water, 3 or 4 times daily. If this does not stop the bad symptoms place the patient in a pack. There are two forms of this. If it comes, say from scarlet fever, and the rash has partly disappeared, the skin is hot and dry and the fever high, it is well to wrap the patient in a sheet wrung out of water at 70 or 80 degrees and then immediately surround him with a blanket.

If no fever is present and the rash has faded, or if it is not advisable to use cold first, the hot pack may be given, the patient being quickly wrapped up in a blanket which has been wrung out of water as hot as the skin can bear. Place outside of this a dry blanket and on the head an ice bag or cold applications to prevent congestion of the brain. Give a few sips of cold water every few moments to drive the blood from the inner organs to the skin circulation so as to cause sweating. The same treatment is to be used in chronic Bright's disease if these bad symptoms are present. Give drugs to meet the indications.

If the uremia is from the second form of Bright's disease (contracted kidney) the same measures may be used. Glonin is especially good for high arterial tension. Give 1/200 of a grain. If the heart is strong give a hypodermic injection of 1/8 grain of pilocarpin. Produce sweating. Watch the lungs and heart. In a mild case of Bright's disease the patient does not know he has kidney disease. He refers all his bad feelings to his stomach and bowels and sometimes to his heart and, unfortunately, some doctors fail to recognize the true condition. The person suffers from what he thinks is indigestion. If a person is sick for some time with what he thinks is stomach, bowel or heart trouble he should have his urine examined and it will frequently be found that the trouble is with the kidneys. The only time to do anything of value with Bright's disease is at its start. The urine should always be examined and especially in a chronic case of disease.

PEOPLE'S HOME REMEDIES.—

1. **White Bean Soup.**—Boil a double handful of the pods of the common white soup bean or corn bean in three quarts of water until it is reduced to half the quantity. Let this be the only thing the patient drinks and he should drink freely of it.

2. **Milk.**—A New York physician has cured many cases of Bright's disease by putting his patients upon a milk diet alone. Care should be taken to get the purest of milk and the patient should gradually leave off other food and increase the daily amount of milk taken to 5 pints.

3. **Bread and Milk.**—Put the patient on a strict diet of stale bread and skimmed milk.

UREMIA.

This term relates to a group of acute and chronic manifestations resulting from poison in the blood due to the retention in the body of certain products of urinary or kidney origin.

Symptoms of Acute Form.—Very severe nervous symptoms come on suddenly. They last a very short time and may soon terminate fatally with convulsions, coma, difficult breathing, feeble heart action, feeble pulse, fever and lung œdema. Sometimes these symptoms are preceded by mild uremic forerunners such as headache, drowsiness, tired feeling, uneasiness and slight difficulty in breathing.

Symptoms of Chronic Form.—There is an absence of the above marked symptoms and milder manifestations appear. In this form the general prostration, feeble heart, arterial conditions, occasional stupor and delirium, fleeting dimness of sight, loathing of food, sickness at the stomach, irregular and hurried breathings and twitching of the muscles indicate the grave condition of the patient. The skin of the face is usually pale in uremic coma.

Treatment.—The treatment is given under Bright's disease. Sweating by placing in a warm pack is necessary so as to relieve the kidneys. Cathartics should also be given.

STONE IN THE KIDNEY.

Nephro-Lithiasis—Renal Calculus.

Description.—The stones are formed in the kidneys from solids derived from the urine. They may be present for years without causing any disturbance. Sometimes they suddenly cause trouble if the patient suffers from a fall, which causes the stone to damage the lining membrane of the pelvis (part of kidney) and as a result there may be blood in the urine. Or, the stone may be started from its nest and proceed to travel down the small channel from the kidney to the bladder and thus cause an attack of renal colic. The result depends upon the condition of the kidney around the stone.

Symptoms.—As stated the stones may be in the kidneys for years without causing trouble. When they escape into the ureter they cause kidney, or renal, colic. The pain is sometimes agony and extends into the pelvis and inner side of the thigh and even into the groin or testicle and penis. The bladder may be irritable and there may be blood in the urine. Sometimes there is total suppression (no passing) of urine if both ureters are closed. Then it is very dangerous and an operation must be performed.

TREATMENT.—Relieve the pain at once by a hypodermic injection of $\frac{1}{4}$ grain of morphine. Between the attacks drink large quantities of pure water like Poland water or one of the Lithia waters, unless the urine is alkaline. If that is the condition drink large quantities of water and take uritone or urotropin or benzoat of ammonia for the purpose of making the urine acid. The dose is from 5 to 10 grains.

If the urine is extremely acid drink water very freely. It is best also to take from 15 to 20 grains of bicarbonate of potassium, 3 or 4 times a day. In other cases give citrate of potassium in 10-grain doses. Drink no sweet wines or beer, but a little rye or Scotch whiskey may be taken, but it is better to do without these drinks altogether. Sedentary people should take some exercise.

Herb Treatment.—Queen of the Meadow made into a tea and drank freely

is very good. My wife has a cousin who for years was troubled with kidney colic and "gravel" passing. One time, many years ago, my wife was visiting this cousin when he was taken with this colic. He suffered very much pain. From the description I think it must have been caused by gravel. At the time he was suffering so much, an Indian whom they well knew, happened to stop in and when he saw the distress of the patient and was told the cause he went out into the fields and gathered some Queen of the Meadow (*Eupatorium Purpureum*). He made a strong tea of this and had the patient drink freely of it and the result was that he was soon relieved of the pain. He continued taking this remedy for some time and was cured. This was over 30 years ago and he is still living.

Homeopathic Treatment.—For the bloody urine take the third trituration of Terebinth. Take a tablet every two hours.

If there is red sand in the urine take the twelfth trituration of *Lycopodium* in the same way.

Berberis Vulgaris is a good remedy. Use 2 drops of the tincture every 2 hours.

ABSCESS OF THE KIDNEY.

Causes.—Blows and infectious fevers.

Symptoms.—It may develop suddenly but it usually develops gradually. There is constant pain over the kidney and the usual symptoms of blood poisoning.

Treatment.—The treatment is an operation.

PYELO-NEPHRITIS AND PYELITIS.

Description.—Pyelo-Nephritis is an inflammation affecting both the pelvis, or sac, of the kidney and the kidney itself. There is usually a pus condition. Pyelitis is an inflammation of the pelvis, or sac, of the kidney only.

Causes.—Generally due to infection from the bladder or urethra.

Symptoms.—Cystitis, or inflammation of the bladder, may either precede or follow this condition and mask the disease. There is pain and tenderness in the back over the kidneys and this is perhaps attended with frequent passing of the urine. The urine is acid, contains pus cells and blood cells and epithelium and is usually scanty in the acute form but profuse in chronic pyelitis.

The result depends upon the cause. In simple pyelitis, occurring during one of the infectious diseases, the outlook is not bad. If the formation of pus is marked the outlook is not good.

TREATMENT.—For the milder forms use diuretics, apply counter-irritation by cups or heat over the loins, and rest in bed. No highly seasoned food should be allowed. If the urine is acid give alkaline diuretics and salol. If the urine is alkaline give 5 grains of uritone or urotropin 3 or 4 times daily in a glass of good water. Other good remedies are acetate of potash in 5-grain doses, citrate of potash in 10-grain doses and sweet spirits of nitre in 1-dram doses.

Homeopathic Treatment.—Use the second dilution of Aconite. Put 10 or 15 drops into half a glass of water and give 1 or 2 teaspoonfuls every hour to 3 hours. Prepare the third dilution of *Belladonna* in the same way and it should follow the use of the Aconite. If there is scanty and painful urination

use the third dilution of Cantharis. Prepare the same as the Aconite. These are very good when used alternately every hour.

PEOPLE'S HOME REMEDIES FOR DISEASES OF THE KIDNEYS AND BLADDER.

1. **Fomentations of Hops and Tobacco.**—If inflammation of the kidneys is caused by the passage of stone, apply warm fomentations of hops and tobacco leaves over the pain. This may be used in connection with other remedies.

2. **Cider, Horseradish, Etc.**—To a quart of sour cider add an ounce each of bruised horseradish and bruised parsley root and $\frac{1}{2}$ ounce each of bruised juniper berries, mustard seed, and ginger. Let them stand and steep for several days and take a wineglassful 3 times a day. A man in Pennsylvania who had kidney trouble for years and who had tried several specialists was finally cured with this simple remedy. It will be found excellent for many kinds of kidney trouble.

3. **Mustard, Hops, Etc.**—For inflammation of the kidneys place the feet in hot mustard water and apply a mustard poultice to the small of the back and follow with hot fomentations of hops and stramonium leaves.

4. **Parsley.**—This is very good for dropsy and especially dropsy following scarlet fever. It is also good for retention of the urine or painful urination. The seeds and leaves powdered and sprinkled on the head will destroy lice. The dose of the tea is from 2 to 4 ounces 4 times a day and the dose of the oil is from 3 to 5 drops. The tea is made by using from $\frac{1}{2}$ to 2 ounces of the plant to a pint of boiling water.

5. **Pumpkin Seed Tea.**—For congestion of the kidneys and scanty urination a tea made from pumpkin seeds will be found wonderfully beneficial and is used by many doctors. A tea made from water melon seeds is also good.

6. **Wild Carrot.**—Make a tea of the roots and seeds and take from 2 to 4 ounces 3 times a day. This is one of the best remedies known for dropsy, gravel and urinary troubles generally.

7. **Common Broom.**—Take from 2 to 4 ounces of the fresh tops and seeds and make a tea with a pint of boiling water. The dose is 4 ounces every hour or two until the effect is produced. This relieves dropsy of the chest by increasing the flow of urine.

8. **Scouring Rush.**—The tea drank freely is good for dropsy and suppressed or bloody urine.

9. **For Dropsy.**—Take 6 quarts of good cider which is medium hard; 4 ounces each of carbonate of iron and the roots and tops of parsley; and 1 ounce each of juniper berries, squills, white mustard seed, mandrake and the root of queen of the meadow. Put all in an unglazed earthen vessel and cover and allow to infuse for 24 hours. The dose is a wineglassful 3 or 4 times a day. This will be found to be an excellent combination for dropsy.

10. **Queen of the Meadow.**—This is an excellent kidney and bladder remedy and is especially good for gravel and bloody and painful urination. It is also good to increase the flow of urine. The dose of the tea is from 2 to 4 ounces, 4 times a day.

Physician's Remark.—I know this to be good and have recommended it for stone in the kidneys. Read the Indian story related in treating that disease.

11. **Corn Silk.**—Make a tea of corn silks and it will be found to be a fine remedy for all kinds of bladder troubles. Use the green silks if possible

but the dry silks are also good. Drink freely of the tea. The doctors use this frequently.

12. **Trailing Arbutus.**—A tea made of the leaves may be drank freely. It is good for gravel and all urinary diseases.

13. **Cleavers.**—This is good for suppressed urine and inflammation of the kidneys and bladder. Use $1\frac{1}{2}$ ounces of the herb to a pint of warm water and steep for two hours. Take from 1 to 4 ounces, 4 times a day.

14. **Arbutus, Queen of the Meadow, Etc.**—Coarsely bruise $\frac{1}{2}$ ounce each of trailing arbutus, queen of the meadow and marshmallow root; pour boiling water and good Holland gin, 1 pint, over the plants and steep with gentle heat in a closed vessel for 6 hours; strain, and sweeten with honey. This is good for gravel and suppressed, painful and high-colored urine.

15. **Juniper Berries.**—Make a tea of the berries by using 1 ounce of the berries to a pint of boiling water and letting them steep from 1 to 2 hours. Give from $\frac{1}{2}$ teaspoonful to 1 ounce every 2 or 4 hours. This is good to increase the flow of urine. The dose of the oil of juniper berries may also be used. The dose is 5 drops.

16. **Juniper Berries and Sweet Spirits of Nitre.**—Use 5 drops of oil of juniper berries and 1 teaspoonful of sweet spirits of nitre. This is one dose and should be given every 3 to 5 hours. This is very good for kidney and bladder troubles when there is not enough urine.

17. **Buchu Leaves.**—Use 1 ounce of the leaves to a pint of boiling water and steep from 1 to 2 hours. This, taken freely, is very good for suppressed and painful urination or inflammation of the bladder.

SUPPRESSION OR RETENTION OF URINE.

Anuria.

This is when no urine is passed.

Treatment.—The treatment depends upon the cause. If it comes from stones an operation will be necessary to remove them.

Allopathic Treatment.—If from other causes than stones give hypodermic injections every 3 or 4 hours of full doses of nitroglycerin. Give nitrate of potash in 10-grain doses. If the kidneys are much congested apply hot poultices or compresses across the small of the back or resort to cupping as described in treating chronic congestion of the kidneys.

Homeopathic Treatment.—If there is scanty or light-colored urine give the third trituration of Apis. Mel. every half hour or every hour. Give one tablet at a dose. If there is thirst and restlessness give the third trituration of Arsenicum in the same way.

Physician's Remarks.—Some years ago a gentleman who did not at that time doctor with me met me on the street. He told me his doctor was away and that his baby was troubled in passing water and passed but little. As he was a farmer I asked him if he had any pumpkin seeds. He replied that he had and I told him to make a tea of them and give it to the child. He gave me a queer look as though he thought I was not in earnest. "Oh, of course," I said, "you can come up to the office and I can give you a prescription and charge you for it but there is nothing that will do more good than pumpkin seed tea." So he agreed to try it. A few days afterward he again met me and said that the child was now all right. He said he had never heard of that remedy before. There is more medical virtue in pumpkin seeds than many think. Medicine made from them is called "pepo" by the doctors but the simple tea is just

as effective. By eating enough of the seeds at night you can stupefy a tapeworm and a cathartic given three or four hours afterwards will generally expel the worm. You would be surprised to know the medical properties of many of these so-called mild remedies. They only need to be used properly to bring out their unsuspected powers.

A friend in Pennsylvania wrote me some time ago that he did not pass enough urine and that urination was very painful. I wrote and told him I could send him a prescription but I advised him to go to the drug store and get a simple remedy—a five-cent package of buchu leaves. Many of these herbs are now put up in this way and are cheap and handy to use. I told him to make a tea of these leaves and drink of it freely. He wrote to me soon afterwards saying he was surprised at the quick and splendid effect of a remedy apparently so simple. Buchu leaves contain a number of medical constituents. Many simple remedies are just as effective as the more powerful drugs.

PEOPLE'S HOME REMEDIES.—

1. **Pumpkin Seed Tea.**—When used freely this is especially good for children. Cut the seeds and steep for 1 or 2 hours. Give from 1 to 4 teaspoonfuls at a dose where the urine does not pass freely. This is a very good remedy.

2. **Pumpkin, Watermelon or Cucumber Seeds.**—An excellent remedy is a tea made from either pumpkin, watermelon or cucumber seeds.

3. **Spearmint Tea.**—Have the patient drink a pint of spearmint tea to which has been added half a gill of Holland gin and an ounce of spirits of nitre. The whole of this should be drank within an hour at different times. If one dose is not enough it may be repeated within two hours.

Physician's Remark.—This will be found to be an excellent remedy.

4. **Hops and Lobelia.**—If inflammation of the neck of the bladder is the cause of the retention of the urine, remain in a warm foot bath for twenty minutes and then apply between the legs a fomentation of equal parts of hops and lobelia leaves.

Physician's Remarks.—Here is another good remedy. Still others will be found under the home remedies for the diseases of the kidneys and bladder.

5. **Baths and Drinks.**—Baths of either cold or warm water are good. Also drink freely of cold water or gum arabic water.

BLOODY URINE.

Hæmaturia.

Causes.—Stone, acute fevers, blows, injuries, etc.

TREATMENT.—The patient should have rest. Counter irritants like mustard, turpentine and cantharides should not be advised and especially in large doses.

Homeopathic Treatment.—For weakness from loss of much blood give the second dilution of China.

PEOPLE'S HOME REMEDIES.—

1. **Drinks.**—Give mild drinks such as slippery elm tea.

LITHURIA.

This is an excess of uric acid in the urine.

Treatment.—Give plenty of water and a proper diet. Not too much meat.

INFLAMMATION OF THE BLADDER.

Cystitis.

SYMPTOMS.—

Acute Form.—There is severe pain in the region of the bladder which is worse from pressure or motion. There is frequent and painful urination with straining and a feeling of scalding. The urine is passed drop by drop, is highly colored, hot and sometimes mixed with blood, mucus and pus.

Symptoms of Chronic Form.—This is not so painful. There is frequent urging to pass urine. The urine is cloudy and when poured from one vessel to another it looks like aropy mass.

TREATMENT.—

Treatment of Acute Form.—Give mild drinks and lots of water.

Homeopathic Treatment.—For the first stage use the third dilution of Aconite. Put 10 or 15 drops into half a glass of water and give 1 or 2 teaspoonfuls every 1 to 3 hours.

Use the third attenuation of Cantharis. This may be alternated with the Aconite if desired.

If there is bloody urine give a dose of the third attenuation of Terebinth every two hours.

Allopathic Treatment.—Washing out the bladder with boiled water and some antiseptic like boric acid is very good but must be done carefully and must never be done by one who has not had experience. Permanganate of potash is good to put in the water and golden seal is also good and especially when the trouble is more acute.

PEOPLE'S HOME REMEDIES.—

Physician's Remark.—Whenever injections into the bladder are given they should be done by one who knows how and is clean and careful.

1. **Teas of Buchu, Pumpkin or Watermelon Seeds.**—Give mild drinks such as teas made from buchu leaves or pumpkin or watermelon seeds.

2. **Corn Silk Tea.**—Corn silk tea is largely used by physicians for all kinds of bladder trouble. Steep the corn silks in water and drink freely. The green silks are best but they are good either green or dry.

Physician's Remark.—Yes, this tea will be found very effective.

3. **Flaxseed Tea.**—Flaxseed tea is good for this and also for kidney troubles.

4. **Bean Pods.**—Drink a tea made of bean pods for chronic inflammation of the bladder.

5. **Golden Seal.**—One of the finest remedies for chronic inflammation of the bladder is a tea made from golden seal roots. Carefully inject the warm tea into the bladder once a day. A tea made from equal parts of golden seal, witch hazel and stramonium is better in some cases.

6. **Arnica, Etc.**—Carefully give injections of warm water with a few drops of tincture of arnica, and drink teas of either flaxseed, marshmallow or peach leaves.

7. **Hot Fomentations.**—Apply hot fomentations of hops, tansy, wormwood or chamomile flowers; use the hot foot bath and give internally some parsley tea with a little spirits of nitre and gin added.

Physician's Remark.—This is a combination of some good remedies and will be found very effective.

8. **Castor Oil.**—Take a warm hip bath and a tablespoonful of castor oil.

Physician's Remark.—By relieving constipation you frequently relieve the trouble.

Other remedies will be found under the home remedies for diseases of the kidneys and bladder.

BED WETTING.

Incontinence of Urine—Enuresis.

Urine, or water, is passed involuntarily at night, usually during the first hours of sleep.

Causes.—It is sometimes caused by stone in the bladder but more frequently it is caused in children by worms.

TREATMENT.—

Preventive Treatment.—Remove the causes and raise the foot of the bed a little but not too much. Sometimes bed wetting becomes a habit. The child should be taught to pass water during the day as soon as there is a call of nature. It should not hold the water for a while, then at night it will be aroused and awake when there is a desire to pass water. Do not let the child drink much liquid at night. Have him sleep on his side with as little clothing as possible. The bowels should be kept regular and he should have a passage every day. See that the private parts are kept clean and then there will be no irritation from that cause.

Allopathic Treatment.—Give the fluid extract of ergot 3 times a day. Give from 10 to 30 drops according to age. Thirty drops is the dose for a grown person.

Give from $\frac{1}{2}$ drop to 5 drops of tincture of belladonna before going to bed. Five drops is the dose for an adult.

Homeopathic Treatment.—Third dilution of Belladonna; third trituration of Nux Vomica; and the second dilution of Equisetum.

PEOPLE'S HOME REMEDIES.—

1. **Dandelion or Cherry Bark.**—Have the child drink freely of tea made from either dandelion root or cherry bark.

2. **Isinglass.**—The following is an excellent remedy for bed wetting. Boil a roll of isinglass (long staple) in a pint of water until dissolved. Add a pint of sweet milk, bring to a boil, and sweeten with loaf sugar. If made properly it looks like custard. Grate a little nutmeg upon it. The dose for a grown person is a tumblerful 3 times a day. Give to children in proportion to age.

DISEASES OF THE NERVOUS SYSTEM.

HEADACHES.

There are different kinds of headaches arising from different causes and we will treat each kind separately. There is the stomach sick headache, the bilious sick headache, the nervous, the neuralgic and the catarrhal headache. Each must be treated from the standpoint of original cause if you expect a real cure. Headaches may be caused by disorders of the stomach, bowels, kidneys, liver or nerves and also by catarrh, weak eyes and female troubles. First find out the CAUSE of your headache and then treat that.

SICK HEADACHE.

Migraine—Hemicrania.

Causes.—Women and nervous people most frequently suffer with this ailment. It may be caused by womb and ovarian diseases and is frequently hereditary. It may also arise from disorders of the stomach, bowels, liver or kidneys.

Symptoms.—Every one knows the symptoms of sick headache. It usually starts in the morning and lasts all day and sometimes even for three or four days. It may start in the back of the head and go to the front and settle in or above one eye or even on both sides. It may cause one to see double or to become partially blind. There is often a wave of sick feeling that goes from the head to the stomach or from the stomach to the head. Sometimes, one cannot bear any noise. After a time the person feels sick at the stomach and gets worse and then there is vomiting of a sour vomit and finally there may be bile present in the vomited material. The vomiting gives relief if the stomach is full of food but sometimes there is no vomiting. The urine may be scanty.

TREATMENT.—Keep the stomach, liver, bowels and kidneys working well.

Stomach and Bowels.—Have at least one passage from the bowels every day because constipation is the cause of a great many sick headaches. Avoid rich greasy foods such as gravies, soups, fried eggs, fried potatoes, fried meats, pork, sausage, liverwurst, pies and cakes. Puddings, fresh bread, hot biscuits, preserves and too much butter all cause sick headaches.

Treatment for Kidneys.—If the urine is not right or appears too thin give acetate, bitrate or bi-tartrate of potash in 5 or 10-grain doses with considerable water. Give three or four times daily. The urine generally has no color as there are not enough solids cast off. This kind of urine is also seen in nervous headache.

Treatment for the Liver.—If the liver is persistently inactive take calomel, blue mass or podophyllin. Many such cases do well if the patient takes 5 or 10 grains of blue mass every week or 10 days and follows this with salts in 6 or 7 hours or sooner.

Secure plenty of rest and sleep and live an outdoor life as much as pos-

sible, for even with the best care and dieting sick headaches sometimes come but, with proper diet and living, they will come less frequently and not be so severe.

Allopathic Treatment.—Hunyadi water taken hot and in sips before breakfast will often regulate the bowels and prevent an attack. For the terrible pain use phenacetin or acetanilid in 5-grain doses. The second dose can be taken an hour after the first. Both of these remedies are hard on the heart and care must be exercised in their use. The following prescription is a good one. Citrate of caffeine, $\frac{1}{2}$ dram; phenacetin, 1 dram; bicarbonate of soda, 1 dram; and aromatic powder, 12 grains; mix thoroughly and make 12 powders. Take one every 1 to 3 hours. Sometimes it is well to produce vomiting, especially if you can do so by taking a little salt water.

Homeopathic Treatment.—I have been very successful in treating headaches with homeopathic medicines and as this is a very common ailment I will give the homeopathic treatment a little more fully than I have for some other diseases.

Put 3 drops of the tincture of blood root into half a glass of water and take 2 teaspoonfuls of the solution every 15 minutes until relieved. However, I like the homeopathic form of the blood root the better. Put 10 drops of the first dilution of Blood Root into half a glass of water and give 2 teaspoonfuls every fifteen minutes until relieved. Blood root is especially good when the pain begins on the right side of the neck and passes forward and settles above the right eye and you have a sick stomach.

If there is no sickness at the stomach but the head is bent forward and it feels as though the brain would fall out of the forehead, then Bryonia is the medicine to use. Put 10 or 15 drops of the second dilution of Bryonia into half a glass of water and give 2 teaspoonfuls every 15 minutes until relieved.

If there is a dull frontal sick headache with persistent and continued constipation, so-called "drink headache," then use the third trituration of Nux Vomica. If the tincture of Nux Vomica is used, from 1 to 5 drops should be given at a dose.

BILIOUS SICK HEADACHE.

Cause.—This is caused by fat, greasy foods or by the presence of menstruation.

Homeopathic Treatment.—Iris, or blue flag, is the treatment for this. Prepare it the same as the blood root is prepared for stomach sick headache and give in the same way. The blood root is for stomach sick headache and the blue flag for bilious sick headache. If you are not sure which you have it is well to alternate these two medicines every ten minutes. This is a very effective treatment. If the headache is due to the presence of menstruation the third dilution of Pulsatilla is good, especially for blondes. Put 10 or 15 drops into half a glass of water and give 2 teaspoonfuls every half hour until relieved.

NEURALGIC HEADACHE.

While the term "neuralgic headache" is not technically correct we will use it as it is best understood in this way. It is not due to other diseases but it just seems to "come on." Every one knows the symptoms. The pain is sometimes light and again it is quite severe. It is usually one-sided and

is frequently caused by taking cold in a hollow tooth. It is well to tone up the system with good tonics.

Homeopathic Treatment.—*Spigelia*, or pink root, is a good remedy and especially when it is on the left side. Put 10 or 15 drops of the second dilution of *Spigelia* into half a glass of water and give 2 teaspoonfuls every 15 minutes until relieved.

When it is periodic and comes on at regular hours; is more in the face; and the patient is hot, restless and thirsty and a little water satisfies the thirst; then the third trituration of *Arsenicum* is the medicine to use.

For congestive headache when the head is throbbing and the eyes are red and sore and cannot bear the light, use the third dilution of *Belladonna*. Put 10 or 15 drops into half a glass of water and give 2 teaspoonfuls every 15 minutes until relieved. The Allopathic treatment and Nursing given under "Nervous Headache" will also apply here.

NERVOUS HEADACHE.

Causes.—Nervous headache is a very common trouble and may be caused by over-doing or by excitement. It is common in school children. Weak eyes are the cause when glasses are needed or when poorly fitted glasses are worn. Poor health, worry, trouble and want of sleep are some of the many causes.

Symptoms.—The common cry, "I'm so nervous I can't stand it," tells the tale. The head feels so big and heavy that you can scarcely hold it up. You may be sleepy; or, on the other hand, you may be sleepless. Sometimes a good restful sleep seems to do a world of good. Some cases are relieved by the passing of a considerable quantity of light-colored urine. The arms and legs are heavy and there is a desire to be quiet. Often the legs are so weak that it is painful to walk.

TREATMENT.—

Allopathic Treatment.—The Allopathic prescription given in treating sick headache is also good for nervous headache.

Give from 10 to 15 grains of bromide of potash. This may be repeated each half hour until 3 doses have been taken.

One teaspoonful of tincture of hops is good when given every 3 hours.

A 5-grain tablet of either acetanilid or antikammia may be taken and repeated in 2 hours. These are good remedies but are hard on the heart and should be used carefully.

Homeopathic Treatment.—When you are very nervous use the first dilution of *Gelsemium*. Put 5 to 10 drops into half a glass of water and take 2 teaspoonfuls at a dose. Repeat every 15 minutes for 4 doses, then every hour.

The third dilution of *Belladonna* is especially good when the head beats and throbs. Prepare and give the same as the *Gelsemium*.

The second dilution of *Coffea* prepared and given in the same way is good when it feels as though a nail had been driven into the side of the head.

The third trituration of *Nux Vomica* is good for those living a sedentary life and troubled with constipation.

The sixth trituration of *Sepia* is good for headache in delicate and sensitive women, especially brunettes, when it comes with scanty menstruation.

For the headache, when the menstruation is very profuse and too frequent, give the first dilution of *Platina*. Give the same as the *Gelsemium*.

Natrum Mur. is used when there are headaches from over study.

Nursing and Diet.—Spend all the time possible out of doors. I have had a number of patients tell me that the work of taking care of a horse has seemed to benefit them most. No doubt this was partly due to the exercise. When suffering with either nervous or neuralgic headache, bathing the head with warm water and at the same time rubbing the head with the hands often quiets the patient. Sometimes, especially when the head beats hard, the application of cold cloths to the head will give relief. A warm foot bath is then good, also, as it brings the blood to the extremities and relieves the congestion in the head. Sometimes a mustard plaster applied to the back of the neck is good. It is well to add the white of an egg to the mustard to prevent blistering.

It is well to place the patient in a rather dark room where it is quiet and then a strong, healthy, sympathetic person should rub the head with the hands. In some cases this does much good. The patient needs quiet, rest and sleep during an attack but at other times should have fresh air and exercise. The system generally needs building up. Sometimes these headaches are due to womb troubles and then these troubles should be attended to. Headache powders and tablets relieve the pain but they are injurious and sometimes dangerous. They are hard on both the nerves and the heart and in time will injure any one.

CATARRHAL HEADACHE.

Causes.—This is caused by inflammations due to catarrhal conditions of the passages of the head. There are often growths in the nose and throat that need attention.

SYMPTOMS.—The pain and inflammation extends from the nose passages to the openings in the skull above the eyes.

Treatment.—Treat the catarrh. Frequently there are growths in the nose and throat that need to be removed.

PEOPLE'S HOME REMEDIES FOR HEADACHES.

1. **Nervous Headache.**—Apply a mustard plaster to the temples or back of the neck.

2. **Sick Headache.**—Add a teaspoonful of lemon juice to 2 gills of warm water. Repeat this dose every 15 minutes. Hundreds of cases of sick headache are cured with this simple remedy. Let it become more generally known and there will be much less suffering from this sickness.

3. **Congestive Headache.**—If the headache is caused by congestion of blood in the head, bathe the head with vinegar and cold water and the feet with warm water. Bathe the temples and forehead with either warm or cold water as desired.

Physician's Remarks.—This relieves the congestion by drawing the blood away from the head.

4. **Headache with Rheumatism.**—For this use the following liniment. Take 3 ounces of saltpeter, 1 quart of brandy, 2 ounces of camphor, and 2 gills of spirits of turpentine. Wet a flannel with this liniment and apply to the head.

5. **Headache from Constipation.**—Take $\frac{1}{2}$ ounce each of mandrake or May apple root, blue flag root, golden seal root, prickly ash bark and yellow puccoon and add $\frac{1}{2}$ gill of beef's gall and $\frac{3}{4}$ pint of whiskey. Let stand for two weeks and take a teaspoonful 2 or 3 times a day.

6. **Sour Stomach with Sick Headache.**—When there is acidity of the stomach with sick headache add 2 teaspoonfuls of powdered willow charcoal to one-half teacupful of soda water (baking soda) and take at one dose.

7. **Sick Headache.**—Have the patient drink sage or pennyroyal tea and give some mild cathartic after the patient has been made to vomit.

8. **Gas on Stomach in Sick Headache.**—To half a glass of water add 2 teaspoonfuls of powdered charcoal and drink for sick headache. This corrects the stomach which is the seat of the trouble.

9. **Nervous Headache.**—This is often instantly relieved by shampooing the head with a quart of cold water in which has been dissolved a dessert spoonful of soda.

10. **Sick Headache.**—Bathe the head with cool water.

11. **Brown Paper and Camphor.**—Saturate brown paper with camphor, apply to the head and bind on with a bandage. Repeat every few minutes while the patient is lying down.

12. **Sick Headache.**—Drink a cup of coffee to which has been added the juice of a lemon or 2 tablespoonfuls of vinegar.

13. **Rochelle Salts.**—Take a teaspoonful of rochelle salts every other night upon retiring.

14. **Hot and Cold Water.**—Apply cold water to the head when it feels good and warm applications to the feet, particularly when they are cold.

15. **Mustard.**—Take $\frac{1}{2}$ teaspoonful of whole grains of mustard internally and use hot applications on the forehead and back of the neck.

Physician's Remarks.—The mustard is to be taken when vomiting is desired. The hot applications are counter-irritants.

16. **Nervous Headache.**—Mix 7 ounces of valerian root, 5 ounces of licorice root, 1 ounce of oil of anise, 1 dram of camphor gum and $1\frac{1}{2}$ pints of alcohol. Take from 1 to 3 teaspoonfuls every 15 minutes until relieved.

NEURALGIA.

Neuralgia is a painful affection of the nerves. Every one who has had it will at least testify as to the painful part. We will speak of several types of neuralgia.

Neuralgia of the Face—Tri-Facial Neuralgia—Tic-Douloureux—Spasmodic Neuralgia of the Face—Prosopalgia.—All the branches of the tri-facial nerve are seldom affected at the same time. There are terrible pains in the face with jerking and twitchings. The pain radiates in the region of the ear, along the lower jaw. Pain is also especially noticeable along the upper teeth. Eating and speaking may be painful. Sores sometimes occur on the lips or eye. Some of the forms of face neuralgia are of frightful intensity and the repeated attacks make the patient's life almost unbearable. Chronic neuralgia is hard to cure.

Neuralgia of the Back of Head and Neck—Cervico-occipital Neuralgia.—This is neuralgia of the back of the head and neck. The painful point is about half way between the ear and the first cervical vertebra. It hurts to move the neck. Sometimes cold is the cause of this.

Neuralgia of Neck and Shoulder—Cervico-brachial Neuralgia.—This is neuralgia of the neck and shoulder. The pain is in the deltoid muscle running from the shoulder to the elbow.

Neuralgia Underneath the Ribs—Intercostal Neuralgia.—The pain seems to lie underneath the ribs. Next to tic-douloureux this is the most important

form of neuralgia. It is more common in women than in men and is very common in cases of hysteria. (Home remedies for "Stitch in the Side" will be found under "Neuritis.")

Neuralgia of the Lower Part of the Spine—Coccydynia.—This is pain in the coccyx or lower part of the spinal column. It is most common in women and is made worse by sitting down. It may be very severe and the bone may have to be removed.

Neuralgia of the Heel and Foot.—There may also be neuralgia in the heel and foot.

TREATMENT.—Build up the system and regulate the mode of life. Change of air is sometimes good. A strict vegetable diet is sometimes necessary. Live an out of door life as much as possible and take plenty of exercise.

Allopathic Treatment.—Arsenic, quinine, strychnine and cod liver oil are good. For the pain give antipyrin or phenacetin. Give strychnine for facial neuralgia.

Homeopathic Treatment.—Belladonna, third dilution; Spigelia, second dilution; Gelsemium, first dilution; Arsenicum, third trituration; and China, second dilution. For intercostal neuralgia use Ranunculus. These are all good. (For preparation and doses see "Homeopathic Medicines" in the Nursing Department.)

PEOPLE'S HOME REMEDIES FOR NEURALGIA AND NERVOUS TROUBLES.—

1. **Thistle Tea.**—A tea made from the common field or bull thistle is considered by the Germans a sure and permanent cure for neuralgia. The tea is made by pressing a vessel full of the leaves, filling with water, and boiling down one-half. A wineglassful of this may be taken internally twice a day. In severe cases a poultice of the bruised leaves may also be applied to the affected parts. Many remarkable and lasting cures have been effected by this simple remedy. In fact, it has never been known to fail.

2. **Sweating Treatment.**—The following will be found almost a sure cure for neuralgia. Bathe the feet for half an hour in hot mustard water and at the same time drink smartweed tea; or, ginger tea will do. Then go to bed and take a sweat for from half to three-quarters of an hour. After the sweat sponge the body with warm water, dry, and rub briskly with the hands.

Physician's Remarks.—This is good for neuralgia which comes from a cold or from inflammation.

3. **Steaming with Vinegar.**—Wrap a cloth wrung out of vinegar around a hot brick or flatiron and apply to the face until it is thoroughly steamed. This is an effective remedy used by a celebrated French physician for neuralgia.

4. **Horse-radish.**—Horse-radish is an excellent remedy for neuralgia. Grate the horse-radish and mix it with vinegar the same as when it is intended for the table. Apply this to the temple when the neuralgia is in the face and to the wrist when it is in the arm or shoulder.

5. **Burnt Sugar.**—Burn some sugar on a hot stove and inhale the fumes.

6. **Hot Salt and Ashes.**—Mix salt and ashes, heat well, put into a salt bag and apply to the parts affected with neuralgia.

Physician's Remarks.—Dry heat is good in some cases of neuralgia.

7. **Salt and Alum.**—If the neuralgia is in the jaw, put equal parts of pulverized salt and alum on a wet piece of cloth and rub upon the teeth.

8. **Lemon Juice.**—Squeeze the juice of a lemon into a tumblerful of water and take two or three mouthfuls every hour for neuralgia.

9. **Mustard.**—Mustard plasters sometimes help neuralgia.

10. **Hops.**—Hot fomentations of hops generally give relief from neuralgia.

11. **Lobelia and Salt.**—Boil a small handful of lobelia in half a pint of water, strain, and add half a teaspoonful of salt. Wring cloths out of the liquid as hot as possible and apply to the affected parts. Change as rapidly as it cools. This is for neuralgia.

12. **Oil of Peppermint.**—"Paint the affected parts with oil of peppermint," writes a lady who has tried it for neuralgia.

13. **Mustard, Ginger, Cloves, Cinnamon and Vinegar.**—Make a poultice of a tablespoonful of ground mustard, a little ginger, cloves, and cinnamon; mix these with vinegar. Place between cheese cloth and apply to the parts affected with neuralgia. Hold warm cloths on but do not blister. Mustard alone is also good.

14. **Liniment for Neuralgia.**—Take equal parts of camphor, chloroform and olive oil. "I have known this to succeed in many cases," writes a lady from Wichita, Kansas.

15. **Peppermint and Benzoin.**—A lady in Birmingham, Alabama, says the following remedy will work like a charm in case of neuralgia. Apply equal parts of benzoin and peppermint oil directly to the parts; or, you can wring a cloth out of hot water, put the medicine on this and then apply.

16. **Wormwood and Vinegar.**—Boil wormwood in vinegar and apply for neuralgia.

17. **Neuralgia of the Heart.**—Give spirits and water as hot and as strong as it can be swallowed and apply a hot mustard poultice to the chest. If there is sour stomach give a teaspoonful of soda in half a glass of water; or, if there is gas on the stomach give anise or peppermint water. If the stomach is full of food give a tablespoonful of mustard in a teacupful of warm water to produce vomiting.

18. **Blue Cohosh.**—Give the tincture of blue cohosh. The dose is from $\frac{1}{2}$ to 1 dram.

19. **Black Cohosh and Skullcap.**—For St. Vitus' Dance give a teaspoonful of the powdered root of black cohosh three times a day. The extract combined with the extract of skullcap is better. This is good for nervous troubles caused by womb diseases.

20. **Virgin's Bower.**—For nervous troubles accompanying womb diseases give clematis virginiana, or virgin's bower. Place 2 drams of the dried leaf in a cup filled with hot water; cover; and after it is cool, strain, sweeten, and drink at once.

21. **Yellow Lady's Slipper for St. Vitus' Dance, Nervous Headache and Hysteria.**—For these troubles use yellow lady's slipper. The dose of the tea is from 1 to 4 ounces; of the best alcoholic extract, 10 to 20 grains; and of the powdered root, 1 dram in hot water. Repeat as often as necessary, say every 1 to 3 hours.

22. **Catnip, Skullcap and Yellow Lady's Slipper.**—For nervous headache or sick headache not due to an acid stomach the following will be found good. Take $\frac{1}{2}$ ounce of the powder of each of catnip, skullcap and yellow lady's slipper; pour on a pint of boiling water and steep from 10 to 20 minutes. Drink while warm. The dose is 1 ounce every $\frac{1}{2}$ to 4 hours as needed.

23. **Tincture of Hops.**—The tincture of hops is good for nervousness and wakefulness. The dose is from 1 to 3 drams. For nervous headache give 15 drops every half hour.

24. **St. Johnswort.**—Make a tea of St. Johnswort and give 1 to 2 ounces four times daily.

25. **Motherwort, Etc.**—Make a decoction of motherwort and give from 2 to 4 ounces every 1 to 4 hours. This is good for hysteria and nervous troubles generally. The fluid extracts of catnip, valerian, or skullcap are good for headache, hysteria and nervousness.

26. **Skullcap.**—A tea made from skullcap is good for nervous troubles. The tea may be drank freely. It is good for nervous, teething children and even for delirium tremens.

27. **Skunk Cabbage.**—Skunk cabbage is a good remedy. The dose of the tincture is 1 dram.

28. **Cramp Bark, Etc.**—Take 2 ounces of high cranberry, or cramp bark; 1 ounce each of skullcap and skunk cabbage; $\frac{1}{2}$ ounce of cloves; and 2 drams of capsicum. Coarsely bruise and add to them 2 quarts of good sherry or native wine. The dose is 1 to 2 ounces, 3 times a day. Small doses may be taken oftener. Good for cramps of muscles, spasms, hysteria, nervousness and asthma, and is especially good during pregnancy.

Physician's Remark.—Most cases of neuralgia of the jaw, face and temple are produced by bad teeth.

HYSTERIA.

Description.—This is a state in which ideas control the body and produce morbid changes in its functions.

Causes.—The disease is more common in women and usually first appears about the time of puberty but it may continue for years. Heredity and the training of the child have much to do with it. Uncontrolled children or children who are allowed to have their own way too much while growing up are especially likely to have hysteria. Over-study may also cause it as may disorders of the ovaries and womb.

SYMPTOMS.—

Convulsive Form.—It may come on suddenly or it may be preceded by alternate laughing and crying or a sense of tightness about the neck or feelings as of a ball rising in the throat. Sometimes the patient suddenly falls over and is unconscious but the fall is rather easy. Unconsciousness may not last long.

Major Forms.—The attack is begun by foolish behavior, excitement, dyspeptic symptoms, gas in the bowels, frequent passing of urine, over-sensitiveness of the body, feeling as of a ball in the throat, sensation of oppression, attacks like true epilepsy, and emotional twisting. The patient tells with great soberness and earnestness about imagined ecstasies, visions, voices, and conversations. She imagines things and even makes very serious charges against people. The convulsions may follow each other for days at a time. After the attack the patient may sink into a trance or lethargy.

TREATMENT.—

Preventive Treatment.—Raise your children out of doors and let them have lots of exercise. Don't let the girls over-study during puberty. Let there be less of social and excitable life. Don't push them forward so much to "show off." See that they have plenty of sleep, rest, and hearty, but not rich, food. Avoid stimulants like strong coffee, teas and wines. See that they have good warm dresses and underwear and that they do not lace tightly.

Keep them out of doors. If need be, send them to a farm where they will have outdoor life and sunshine and where they can play in the barns and fields and smell the new-mown hay.

Allopathic Treatment.—Have the patient smell of amyl. Break a capsule into a handkerchief for this purpose. If there is anemia (poor blood) give tonics such as iron or arsenic.

Homeopathic Treatment.—Pulsatilla, third dilution; Gelsemium, first dilution; Sepia, sixth trituration or Natrum Mur., thirtieth trituration. Pulsatilla is especially good for blondes and Sepia for brunettes. Gelsemium is for nervousness. (For doses and preparation see "Homeopathic Medicines" in Nursing Department.)

PEOPLE'S HOME REMEDIES.—(Also see "Home Remedies for Neuralgia and Nervous Troubles.")

1. **Tonics.**—For hysteria give tonics of gentian, columbo, cinchona or golden seal.

2. **Tonic Cordial for Hysteria.**—Take 1 pound of poplar bark and 8 ounces each of dogwood bark and the bark of the root of bayberry. These should all be made fine and a sufficient quantity of water added. Boil down to 2 gallons; strain; and add 7 pounds of sugar, 8 ounces of pulverized peach kernels and 1 gallon of French brandy and then bottle for use. The dose is half a wineglassful 3 or 4 times a day.

NERVOUS EXHAUSTION.

Neurasthenia.

Causes.—Long continued mental strain, worry, and, in women, excessive social duties, are causes of nervous exhaustion. It may also follow weakening diseases.

Symptoms.—The symptoms are varied. In some cases the mental condition of the patient suffers chiefly and symptoms may vary from mere irritable temper to great mental depression and even to mental weakness, melancholia and insanity. Sometimes there is persistent sleeplessness. In other cases the patient has stomach and bowel troubles. The heart is lacking in nerve supply and there is palpitation, vertigo, and sometimes fainting. There are signs of hysteria, numbness, tingling and over-sensitiveness in painful parts.

The degree of the recovery depends upon the ability of the doctor to get the patient away from the causes which produced the condition and upon the willingness of the patient to follow those methods of life which will re-establish his nervous balance and build up reserve energy. The recovery also depends partly upon the age and physical condition of the patient.

TREATMENT.—There is not much medicine needed. The homeopathic treatment is to give the second dilution of Gelsemium regularly for a long time.

Nursing and Diet.—The patient must have absolute mental and physical rest and freedom from all worries. Give proper feeding and keep the stomach, bowels and kidneys in good working order. Do not over-do in any way. The patient should have cheerful rooms with plenty of sunshine and should always have pleasant, cheerful faces about him. He should have constant encouragement. Relatives and friends must remember that this is not a fancy but a real disease. I have known people who laughed at neurasthenics, or people suffering from nervous exhaustion, and I have later seen these same people in the same condition. Rest and encouragement will bring most cases

through. Do not over-exert when you are getting better or you may have a relapse. Walking and slow driving with a safe horse and good company are helpful but do not have company who tire you. Most people are ignorant as to what to do or say to persons afflicted with this disease. So many people have no patience and should be kept away from those suffering with nervous exhaustion. A general change of scene is sometimes beneficial.

SLEEPLESSNESS.

Insomnia.

Causes.—Often caused by nervousness and too much mental work, especially at night.

TREATMENT.—

"What to Do."—Get away from excitement. Go to the country and be out doors doing light work as much as possible. Tone up the system. Drink hop tea or get a hop pillow to sleep on. Instead of the hop tea you can take the tincture of hops in 15-drop doses. Sleeping in the barn on the hay is often conducive to sleep. Some people need big pillows and some need none. Change of scene and work is generally of benefit. People who engage in outdoor work, unless they work too hard, are generally good sleepers. Keep the head cool and the feet warm.

"What Not to Do."—Do not take opiates. Do not eat much at night and, on the other hand, do not go to bed with the stomach entirely empty. Do not do any mental work at night. Do not talk politics or religion and do not get excited when you can avoid it.

Allopathic Treatment.—At bed time take 1/100 grain of hyoscine. From 5 to 15-grain doses of potassium bromide are good for nervousness and over work. The tincture of valerian is good for nervousness. Take 1 teaspoonful in a glass of warm water or milk before retiring.

Homeopathic Treatment.—The first or second dilution of Gelsemium is good when taken half an hour before bed time. Put 10 or 15 drops into half a glass of water and take 2 teaspoonfuls. Or, you can prepare the third dilution of the same medicine in the same way and take two teaspoonfuls regularly every 3 hours during the day.

PEOPLE'S HOME REMEDIES.—

1. **Onions.**—Three or four small onions eaten just before going to bed have a soothing narcotic effect and induce sleep.

2. **Cold Water Cloths.**—Wet a towel in cold water and apply to the back of the neck and lower part of the head and cover with a dry towel. This is excellent where sleeplessness is the result of an overworked and congested brain.

3. **Food and Mental Exercises.**—Eat a few bites of some light food. Recite poetry or the multiplication table.

Physician's Remarks.—The food draws the blood to the stomach and thus relieves the congestion of the brain.

4. **Fresh Air and Sunshine.**—Like all other afflictions the patient needs quiet, fresh air and clean, freshly aired bedding. Be out doors in the sunshine as much as possible.

5. **Hot Water.**—Drink hot water three times a day or at any time you are thirsty and bathe the feet in hot water before going to bed.

Physician's Remarks.—The hot water draws the blood to the stomach

and the hot foot bath draws it to the feet, thus the blood is taken away from the brain and the congestion is relieved.

6. **For a Nervous Babe.**—Place in some resting position and gently rub its back with the open hand. See how soon the little one is quiet or asleep.

FAINTING.—(See “Accidents and Emergencies.”)

HICCOUGH.—(See “Accidents and Emergencies.”)

DIZZINESS OR VERTIGO.—(See “Accidents and Emergencies.”)

SCIATICA.

Sciatic Rheumatism.

Description.—The sciatic nerve runs from the hip down the back part of the leg and branches in the lower part of the leg and foot. Sciatica is inflammation of the sciatic nerve. It is frequent in people troubled with rheumatism or gout and occurs more frequently in men.

Causes.—Exposure to cold when wet or sweating is the cause though it sometimes seems to come on without any cause.

Symptoms.—There is pain in the hip and down the back part of the thigh, reaching to the foot and radiating over it. Often the pain is excruciating and is sometimes accompanied with cramps.

TREATMENT.—

Rest in bed and if it is bad apply a splint to the leg. Apply fly blisters to the painful parts and sometimes morphine must be used. Warm baths and mud baths are also good.

Allopathic Treatment.—Use salicylate of soda in 5 to 10-grain doses 3 or 4 times a day. Fly blisters for all treatments. Apply leeches. Rest in bed. Alternate hot and cold water upon the parts. When the pain is confined to a small place apply fomentations of hops and vinegar.

Homeopathic Treatment.—At the beginning when there is fever give the second dilution of Aconite. Rhus Tox., sixth dilution; Colocynth, second dilution; Bryonia, second dilution; and the third trituration of Arsenicum are all good. (For preparation and doses see “Homeopathic Medicines in Nursing Department.”)

SUNSTROKE.

Heat Stroke—Isolation or Thermic Fever—Coup de Soleil—Heat Exhaustion.

Description.—This is a condition produced by exposure to excessive heat. In rare cases the temperature of the patient is below normal and it is then called “heat exhaustion.”

Causes.—As stated in the description, it is caused by excessive heat.

Symptoms.—The patient may be struck down and die within an hour. This form occurs chiefly in army life. In the early stage of ordinary cases there is a feeling of oppression and dizziness. If no attention is paid to these symptoms and the patient does nothing to relieve the heat, sudden unconsciousness comes on, sometimes preceded by convulsions. In other cases there are no convulsions but there is deep stupor with deep breathing and even snoring. The face is at first livid and later dark and the large blood-vessels of the neck and arms are swollen with blood. The temperature quickly rises very high, the average being between 105 and 107 degrees. The pupils

of the eyes may be smaller than usual or they may be very much enlarged. If the fever cannot be reduced and if the blood cannot be drawn away from the heart and lungs, death will be the result in from twelve to thirty-six hours. When the patient is getting better he sometimes has a relapse, or "set back," so that the greatest caution must be observed. The result of sunstroke depends upon the height and persistency of the fever. Many people die each year from sunstroke.

TREATMENT.—

Treatment for Heat Exhaustion.—For heat exhaustion, or when the temperature is too low, rub the patient in hot water and after the bath apply hot applications about the body. Notice that this is the treatment only when the temperature is too low.

Emergency Treatment for Sunstroke or "What to Do."—The treatment must be bold and vigorous. First, reduce the temperature by applying ice or cold water. Strip the patient, lay him on a canvas cot and then direct a stream of cold water upon his body, from a hose if possible. Rub actively and vigorously while applying the water. This brings the blood to the surface and relieves the internal organs and the head. Rub thoroughly and at the same time constantly apply cold water to the head. If convenient the patient may be put into a bath tub and the above treatment carried out. When the temperature begins to fall see that it does not fall too rapidly. If the patient is robust and the veins are swollen, bleeding may be of benefit. Then follow with a normal salt injection. Have the patient remain in bed for several days.

Caution, or "What Not to Do."—Do not lose time but get to work. Do not get excited. Do not give alcohol.

Allopathic Treatment.—If the patient is constipated give citrate of magnesia in 4-dram doses to relieve him. If he is unconscious give a hypodermic injection of 1/6 grain of elaterium for the bowels. If it is necessary to stimulate give strychnine but do not give alcohol.

Homeopathic Treatment.—In connection with the above measures you may give the third dilution of Glonoin. Put 10 or 15 drops into half a glass of water and give 2 teaspoonfuls every half hour. This is for the beating arteries and throbbing head.

PEOPLE'S HOME REMEDIES.—

1. **Essence of Ginger, Cold Water, Etc.**—Put the patient in a sitting position and pour cold water freely upon the head. Into half a tumbler of water pour two or three tablespoonfuls of essence of ginger and have the patient drink it quickly.

FALLING FITS.

Epilepsy.

Description.—This is an affection of the nervous system marked by attacks of unconsciousness either with or without convulsions.

Symptoms.—A peculiar feeling called the "aura" goes over the patient just before the attack comes on. Then he utters a peculiar cry or scream. At the same time, in a wide spread attack, the muscles of the whole body become strongly contracted until they are in a stiff spasm. After the spasms relax there are alternate contractions and relaxations which throw the patient from side to side. He usually foams at the mouth and sometimes bites his tongue. The face changes color rapidly and finally the flush deepens into a

livid purple. The attack lasts about two minutes and is a terrible thing to see. In the ordinary form there is little danger of death. The patient finally becomes dumb in action and speech.

TREATMENT.—Bromide of potassium can be used under a doctor's directions. This must be continued for months and years and continued for three years after the patient is seemingly cured.

PEOPLE'S HOME REMEDIES.—

1. **Oxide of Zinc and Stramonium Ointment.**—A physician who has been very successful in curing epilepsy uses oxide of zinc. It should be taken three times a day. The first 8 days the dose is $\frac{1}{2}$ grain; then take 1-grain doses for the next 8 days and then use $1\frac{1}{2}$ grains until cured. It is well while under this treatment to rub the spine twice a day with stramonium ointment. The dose of oxide of zinc seldom has to be increased above $1\frac{1}{2}$ grains.

ST. VITUS' DANCE.

Acute Chorea—Sydenhams Chorea.

Description.—This is a disease chiefly affecting children. It is attended with irregular and involuntary contractions or twitchings of the muscles and these twitchings are sometimes limited to certain muscles. There is a remarkable liability to acute endocarditis, or heart disease. Seventy-nine per cent. of the cases are females. It occurs mostly between the ages of 5 and 15 years.

Causes.—It is due to a run down condition of the system.

Symptoms.—In a mild case the speech is not seriously affected but the patient is restless, can't sit still, has "fidgets" and crying spells and sometimes night terror. The patient has stomach trouble, anemia, a changed disposition and is cross and irritable. In a week or more the jerky movements begin and the patient is awkward and upsets things at the table, etc.

In the severe form the movements become general and the patient cannot go about or dress himself. The speech is affected and sometimes he cannot talk for days. It usually lasts from 8 to 10 weeks and children usually recover. Chronic chorea sometimes follows the acute kind but it is a rare affection.

TREATMENT.—

"What to Do."—Allow the patient to have rest and keep him from worry and excitement. Keep him home from school. Apply a hot pack to produce sleeping.

"What Not to Do."—Do not allow an exceptionally bright child to over study between the ages of 5 and 15 years.

Allopathic Treatment.—Give iron and arsenic if there is anemia (poor blood) and salicylates if the child is rheumatic. Arsenic may be given in the form of Fowler's solution of arsenic. For a child of 10 years give 3 drops 3 times a day and gradually increase. 1 drop every day, until some puffiness appears about the eyes, then stop its use.

Homeopathic Treatment.—Give one tablet of the third trituration of Arsenicum every 3 hours.

If the patient is weak from a long sickness give the second dilution of China. Put 10 or 15 drops into half a glass of water and take a teaspoonful or two every hour to three hours.

If the patient has menstrual troubles, prepare and give the third dilution of Pulsatilla in the same way.

PEOPLE'S HOME REMEDIES.—(Also see "Home Remedies for Neuralgia and Nervous Troubles.")

1. **Lady's Slipper.**—Make a tea of Lady's slipper and give from 1 to 2 ounces, 4 times a day.
2. **Blue Cohosh.**—Make a tea of blue cohosh and give 3 or 4 times a day. This is especially good when the St. Vitus' dance is due to womb or menstrual troubles.
3. **Skullcap.**—Drink freely of a tea made from skullcap.
4. **St. Johnswort.**—Drink a tea made from St. Johnswort. This should be drank several times a day.
5. **Lettuce.**—Eat plenty of lettuce when afflicted with St. Vitus' dance.

HEREDITARY CHOREA OR ST. VITUS' DANCE.

Huntington's Chorea.

Description.—Fortunately, this affliction is rare. It is characterized by irregular movements, disturbed speech and twitchings of the face, brow and scalp.

First Symptoms.—There are twitchings of the muscles of the face, head and arms and there are also gesticulations.

Treatment.—It is very hard to cure. Live an out-of-door life and take tonics and nerve sedatives.

APOPLEXY.

Causes.—This is caused by brittle arteries which break because of their filling with blood or becoming congested from any cause such as excitement, over work, over lifting, over eating or over stimulation. May be caused by injuries.

Symptoms.—There is sudden dizziness, faintness and disturbed speech followed by coma or stupor. The face becomes flushed and dusky or, in very severe cases, it may be ashy pale. The pulse, which is slow and soft at first, becomes full and bounding. The breathing is slow and irregular and is accompanied with snoring. The eyes are fixed and staring, the pupils varying and generally unequal in size. The patient may have convulsions. He may die very soon or he may partially recover. In many cases paralysis is noticed when he regains consciousness.

TREATMENT.—

Emergency Remedy or "What to Do."—Place the patient in a lying position, loosen the clothing, raise the head of the bed and apply ice or cold water to the head. Give a hot mustard bath. If the tongue draws back, put a towel or handkerchief over it and hold it forward.

Caution or "What Not to Do."—Do not let the tongue draw back in the mouth and in applying water to the head, do not let it drip into the mouth or the patient may choke to death.

Nursing and Diet.—In addition to what has been recommended there are other things you can do for the patient. As before directed, in applying water to the head, do not allow it to drip into the mouth for a few drops can choke a person in this condition as he is unable to swallow. Do not let the water drip on the neck or other parts of the body. If you have no ice bag you must change the cold water cloths often to keep them cold. The tongue gets very

dry, especially when the mouth is open. Moisten it often but be careful about getting water into the mouth. If necessary the bowels should be kept open with injections or with salts. Salts can only be given after he has recovered enough to swallow. Usually the urine must be drawn and especially in old persons. It may dribble away but that will not be enough. If the patient is continually moving his hands over the region of the bladder and acts as though he were in pain, you had better draw the urine at once. This applies to any disease.

The patient must have quiet and rest. Improvement is slow in this disease. Never talk about the patient's condition in his presence. In many cases he is able to partially understand even though seemingly unconscious. Bleeding may be useful in some cases. Regulate the diet. Time and nursing frequently work wonders even in the most desperate cases.

ABSCESS OF THE BRAIN.

Causes.—May come from inflammation of the middle ear, caries (death) of the bones of the nose or skull, infected skull wounds, infectious diseases, influenza, or erysipelas.

Symptoms.—In acute cases there is high fever and the symptoms of meningitis.

Treatment.—Operation if possible.

LOSS OF SPEECH.

Aphasia.

The power of speech becomes impaired or arrested as a result of disease or injury of that part of the brain which controls speech. The speech may return if the disease is not too extensive. Good nursing and dieting are about all that can be done.

LOSS OF VOICE.

Aphonia.

Loss of voice may be due to disease of the vocal cords, to diphtheria, or to some disease of the nervous system.

STAMMERING.

The treatment lies mostly with the patient. Speak slowly and distinctly and do not get excited. Go to a school for stammerers if you can.

PEOPLE'S HOME REMEDIES.—

1. **Closed Teeth and Marking Time.**—Practice reading aloud with the teeth closed and tap with the finger at every syllable you pronounce. This has proven effective in many cases.

2. **Proper Breathing.**—A person does not stutter when singing because the lungs are full and inflated. Then keep the lungs well filled, take deep breaths, speak loudly and when there is a hesitation, stop instantly and take in another long breath before trying again.

3. **Speaking Slowly.**—Stop when you stammer, wait awhile and then try again to say the word more slowly.

TUMORS OF THE BRAIN AND ITS MEMBRANES.

There are many kinds of tumors of the brain.

Symptoms.—Headache sometimes produces temporary loss of the mind. Next there is projectile vomiting which is a hurling forth of the material with force. There is dizziness, slowness of thought, mental failure, loss of speech and paralysis.

Treatment.—Sometimes the tumor can be removed. Make the patient as comfortable as possible.

GENERAL MENINGITIS.

Description.—This is an inflammation of the membranes covering the brain and spinal cord.

Causes.—May be caused by injury, bone disease or infection.

Symptoms.—There is headache, a confused mind, delirium and convulsive attacks.

Treatment.—Move the bowels with salts, apply cold to the head, rest in bed in a darkened room and have perfect quiet. If symptoms of pressure develop an operation will be necessary if it is possible.

PARANOIA.

Dementia Paralytica—Paresis—General Paralysis of the Insane.

Causes.—Syphilis causes 75 per cent. of the cases. It is a sequel of that disease. Alcoholism and excessive sexual indulgence also cause it. It is common among "rakes." This is a disease of middle life occurring most frequently between the ages of 30 and 50 years. Some cases seem to follow sunstroke and injury.

Symptoms.—The patient seems to be nervously fatigued or mentally fagged. The temper is irritable and at times he takes offense easily. At times he is also very forgetful. Even though naturally tidy, he becomes sloven and careless. Though formerly kind, he becomes brutal to his family. His speech becomes indistinct and the pupils of the eyes act unevenly. He may have delusions, extravagant ideas. He may believe he is a great historical character or that he is a king or very rich. As brain disease progresses he becomes mentally dull and frequently becomes emotional and laughs and cries without cause. He is depressed at times and exalted at other times. He may become frenzied with rage and commit a crime. Death usually comes in a bad case from the third to the sixth year.

Treatment.—Treatment can relieve but cannot cure.

LOCOMOTOR ATAXIA.

Tabes Dorsalis—Posterior Spinal Sclerosis.

Description.—This disease is characterized by incoordination of movement, loss of muscle sense, loss of the deep reflexes and impairment of station and gait. The most noteworthy loss of reflex is in the knee joint and iris. Males suffer more than females, ten to one. One half of the cases develop between the ages of thirty and forty and 80 per cent. occur between thirty and fifty years of age.

Causes.—The most common cause is acquired syphilis. It rarely is the result of hereditary syphilis. It is the result of syphilitic diseases. Next to syphilis the cause is injury, such as a severe fall or blow on the spine. The primary lesion is in the posterior ganglia, posterior roots of the spinal cord,

and in the cranial nerves and not in the posterior columns of the spinal cord as was once thought.

SYMPTOMS.—The patient says that his feet feel muffled as if he had on a thick pair of socks. In other cases he notices that on arising at night he has difficulty in getting a proper purchase on the floor with his feet, or the floor may feel to him as though it were different from what it really is. It is hard for him to walk in the dark.

Peculiar Gait.—The foot is raised awkwardly with an uncertain motion. The edge of the foot sometimes rests on the floor. If the light is poor the patient sometimes staggers and falls.

Disturbance of Station.—The patient cannot stand steadily. If the eyes are closed or blindfolded, he sways so that he is in danger of falling.

Other Symptoms.—There is total loss of the knee jerk when the tendon is tapped. The patient has pains and loss of sensibility. There are lightning pains in the legs which are darting and burning. There are tickling, pricking, creeping, sensations of heat and cold. In 80 per cent. of the cases the eyes fail to react to light and there may be other eye troubles. Owing to changes in the elbows, shoulders, hips and knees, the landmarks of these parts may be completely lost and there is often great swelling. In the secondary stage there is perforating ulcer of the foot. Recovery is not possible but it may remain stationary. If it comes from syphilis, proper remedies may check it, but they cannot cure it.

TREATMENT.—If the syphilis cause is of recent date, give mercury. Iodide of potassium is the usual remedy but it must be used under proper directions. For the twitching in the limbs give the bromides of sodium, potassium and ammonia in large doses. In some cases certain exercises, baths or electricity are good.

ACUTE ANTERIOR POLIO MYELITIS.

Description and Symptoms.—In this disease there is sudden loss of power in one or more of the limbs. Most commonly it is in the legs. Wasting of the muscles takes place immediately. The acute disease is strictly one of child life and occurs most frequently during the first three years.

Treatment.—Give the patient rest in a quiet and darkened room and doctor the conditions as they arise. The result is good so far as life is concerned but it is hard to tell how much the paralysis can be helped. Electricity may do some good.

CHRONIC ANTERIOR POLIO MYELITIS.

Symptoms.—This closely resembles the acute kind. The muscles are paralyzed and waste away. The outlook is grave. The future of the case may be determined somewhat by how rapidly it develops. When the disease is caused by injury the outlook is better.

Treatment.—Have good surroundings, nutritious food, and fresh air and sunshine. Rub the paralyzed parts gently but not too much.

BULBAR PARALYSIS.

Description.—This affects the tongue, lips and larynx. There is shrinking of the tongue and lips.

Causes.—Lesions in the lower back part of the brain.

Symptoms.—The disease usually begins with difficulty in moving the

tongue. The patient is hardly able to say the letters "v," "n," "r," "f," and "l." He speaks "through the nose" and chewing and swallowing become difficult. All conditions gradually get worse. The disease is usually fatal.

Treatment.—Give tonics. Medicine does not do much good.

LATERAL SCLEROSIS.

Description.—The patient suffers from stiffness of the muscles of the legs, with loss of power of motion and with great reflex irritability.

Causes.—It may be caused by syphilis, injuries, or by suddenly taking cold as men do sometimes in washing sheep.

Symptoms.—There are spasmodic contractions, or jerking, of the muscles of the legs. There is difficulty in bending the knees and ankles and greater difficulty in raising the toes. The disease often lasts for 25 years.

Treatment.—Treatment does not do much good.

MYELITIS.

(Transverse Kind.)

Description.—This is an inflammatory process in the spinal cord.

Symptoms.—There is pain in the back, numbness, and tingling in the legs. There is a terrible twitching or cramp-like contraction of the limbs. Loss of the power of the legs may be the first symptom. There is paralysis of the bladder and holding of the urine or else an inability to hold it. There is a band-like feeling around the abdomen. Sometimes the legs jerk terribly. A few cases may get well but many linger and finally die of some other trouble.

Treatment.—The treatment does not do much good. Give good nursing and diet and draw the urine with a catheter if necessary.

SPINAL MENINGITIS.

Description.—This is an inflammation of the membranes of the spinal cord.

Causes.—It is nearly always secondary to some other disease such as typhoid fever or acute articular rheumatism.

Symptoms.—There is pain, chills, and fever and it is soon noticed that the patient is stiff. After the thigh has been fixed at right angles to the trunk the patient's leg cannot be bent at the knee. The muscles of the back and neck are very stiff. There is paralysis of the bladder and the patient is either unable to retain or unable to pass urine and feces. These symptoms must be watched for.

Treatment.—Keep up the patient's strength and allow absolute rest on a soft bed.

ACUTE ASCENDING PARALYSIS.

Landry's Paralysis.

This begins in the legs and passes rapidly upward until it affects the muscles of the trunk and arms and finally causes death by the patient's being unable to breathe. The result depends upon the severity of the attack, the parts affected, and upon the condition of the heart and lungs.

Treatment.—Allow rest and meet the indications.

SHAKING PALSY.**Paralysis Agitans.**

Description.—This is a chronic affection of the nervous system attended with weakness, tremors, and rigidity of the muscles and especially affects the hands and forearms.

Cause.—This is not known. More men than women are affected.

Symptoms.—The hands and forearms tremble or shake almost continuously. As to the attitude, the head is bent forward, the back is bowed and the arms are held away from the body and are somewhat bent at the elbow.

Treatment.—Live an out-door life and have plenty of quiet and rest. Give 1/100 grain of hyoscine from 1 to 3 times a day. The disease is incurable but you can make the patient more comfortable and prolong life.

NEURITIS.

Description.—This is an inflammation or degeneration of a nerve. Perineuritis means inflammation around a nerve structure. If the fibres of the nerves are primarily affected it is called parenchymatous neuritis. It is called interstitial neuritis when there is inflammation of the tissues surrounding and between the nerve fibres.

Causes.—The causes are injury, diseases, alcohol, metallic poisons or gout.

Symptoms.—The symptoms vary very much in different cases. When there is a very mild attack, only a tingling sensation or a numbness may be felt. When it is more severe the tingling and prickling sensations are felt not only at the place where the trouble is but also far away from it at the end of the nerve. If the disease is the result of pressure there is some loss of motion but not much pain. If it is the result of infection from a wound, pain is present and usually severe. If it continues there is a glossy skin and wasting of the muscle.

TREATMENT.

Allopathic Treatment.—The part affected may be wrapped in lint heavily smeared with an ointment made of equal parts of ichthyol and lanolin, outside of which is placed some oil silk to hold the moisture. In some cases hot poultices of flaxseed or cloths wrung out of hot water may be applied in the earlier stages to relieve the inflammation. If the pain is so severe you cannot sleep you can use 5 grains of phenacetin 4 or 5 times a day. For the same purpose acetanilid may be used in the same doses or antipyrin may be used in slightly larger doses. If absolutely necessary, morphine may be used hypodermically for the pain. Place the parts at rest. If it is the arm it should be placed in a sling. After the acute stage you can take strychnine in doses of from 1/60 to 1/30 of a grain. Or, nux vomica may be used in 5 to 10-drop doses. These may be combined with phosphorus and small quantities of quinine. Faradic electricity may be carefully applied but never so as to produce suffering.

Homeopathic Treatment.—The medicines used are the second dilution of Aconite, the third dilution of Belladonna, the second dilution of Bryonia, the third trituration of Arsenicum and the sixth dilution of Rhus Tox. (For preparation and doses see "Homeopathic Medicines" in Nursing Department.)

PEOPLE'S HOME REMEDIES FOR STITCH IN THE SIDE.

1. **Mustard Poultices.**—The application of hot water or mustard poultices will usually give relief.

2. **Laudanum, Sassafras, Etc.**—Take an ounce each of laudanum and oil of origanum and an ounce-and-a-half each of oil of hemlock and oil of sassafras. Mix these together and rub thoroughly on the affected parts.

3. **Camphor.**—Saturate a flannel cloth with spirits of camphor, place on the painful parts and cover with a dry cloth.

4. **Belladonna Plaster.**—Apply a belladonna plaster.

MULTIPLE NEURITIS.

Polyneuritis—Peripheral Neuritis.

Description and Causes.—This is a condition in which a large number of the peripheral (end) nerves of the body suffer from chronic inflammation as a result of the action of some toxic agent. These toxic agents may be derived from external or internal sources. The external toxics are alcohol, lead, arsenic, copper, mercury, aniline, carbon monoxide and carbon bisulphide. The internal sources are poisons developed in the various acute infectious fevers, as typhoid fever, small-pox, scarlet fever, influenza, pneumonia, diphtheria, dysentery, etc. The disease is most frequent between the ages of 20 and 50 years.

Symptoms.—The symptoms are fairly constant no matter what the cause. Alcoholic neuritis is the type most frequently met with. At the beginning there may be slight fever. The patient complains of tingling and numbness in the feet and fingers. In other cases there is dull pain. Following these, weakness develops. The patient may be unable to move his hands or feet and "foot drop" or "wrist drop" develops. After a little time wasting of these parts takes place. Then there may be over sensitiveness of the parts affected. The symptoms may even be somewhat like those of locomotor ataxia. Some parts of the skin may suffer from excessive sweating and swelling and sometimes the joints are swollen. The nerves of the head are also affected and the patient may squint. Poison from diphtheria is the most common internal cause and is called "diphtheria neuritis." It most frequently affects the muscles of the palate. This makes speech and swallowing difficult. Some are paralyzed in all their extremities. Sometimes they cannot control the head.

The chances for recovery are favorable in nearly every case unless the patient has been exposed to lead, arsenic or alcohol for so long a time that the nerves cannot undergo regenerative change. Less pain and tenderness are the first symptoms of improvement. Recovery may take months.

TREATMENT.—

Allopathic Treatment.—Remove the cause such as lead or arsenic. Give to these patients from 20 to 30 grains of iodide of potassium 2 or 3 times a day. Alcohol must be stopped if taken to excess. Laxatives or purges are beneficial. Drink freely of water. Give baths, iron and arsenic for anemia, or poor blood. Carefully examine the heart and if necessary keep the patient lying down. Give salicylates if needed.

Homeopathic Treatment.—The homeopathic medicines for this disease are the second dilution of Aconite, the third trituration of Arsenicum, the second dilution of Bryonia and the sixth dilution of Rhus Tox. (See "Homeopathic Medicines" in Nursing Department for preparation and doses.)

CATALEPSY.

This is a sudden loss of all voluntary moving power so quickly befalling all muscles that the different parts of the body remain in precisely the same

position in which the attack finds them, thus making the patient appear like a statue. In itself, it is not fatal.

Treatment.—Restore the tone of the system with tonics, etc.

DELIRIUM TREMENS.

Mania a Potu.

This is really only an incident in the history of chronic alcoholism and results from the long continued action of the poison on the brain. A spree in a temperate person, no matter how prolonged, is rarely if ever followed by delirium tremens; but in the case of an habitual drinker a temporary excess is apt to bring on an attack. It sometimes develops in consequence of the sudden withdrawal of the alcohol.

At the outset of the attack the patient is restless and depressed and sleeps badly, which causes him to take alcohol more freely. After a day or two the characteristic delirium sets in. The patient talks constantly and incoherently; he is incessantly in motion and desires to go out to attend to some imaginary business. Hallucinations of sight and hearing develop. He sees objects in the room, such as rats, mice or snakes, and fancies they are crawling over his body. The terror inspired by these imaginary objects is great and has given the popular name "horrors" to the disease. The patients need to be watched constantly, for in their delusions they may jump out of the window or escape.

In private practice recovery takes place in a large proportion of the cases.

Treatment.—Produce sleep and support the strength. In mild cases $\frac{1}{2}$ dram of bromide of potassium combined with 10 drops of tincture of capsicum may be given every 3 hours. Hyoscine, $\frac{1}{100}$ grain, can be given hypodermically. Careful feeding is the most important element in the treatment of these cases. Milk and concentrated broths should be given at stated intervals. (Extracts from Dr. Osler, one of the greatest physicians of the world.)

PEOPLE'S HOME REMEDIES FOR DRUNKENNESS.—

1. **Thompson's Composition Tea.**—It is claimed that Thompson's Composition Tea will cure drunkenness. Take hemlock bark, 1 pound; bayberry bark, 2 pounds; ginger root, 1 pound; cloves, 2 ounces; and cayenne pepper, 2 ounces; pulverize and mix well. Of this take half a teaspoonful with a teaspoonful of sugar and put into half a teacupful of boiling water. After it has stood a few minutes fill the cup with milk. Drink half of this upon arising in the morning and the rest just before meal time.

2. **Tonic and Stimulant.**—A celebrated physician gives the following: magnesia, 10 grains; sulphate of iron, 5 grains; peppermint water, 11 drams and spirits of nutmeg, 1 dram. This quantity should be taken twice daily. It is a great tonic and stimulant and has proven successful in many cases for which many are most thankful.

3. **Stramonium Leaves.**—Give a tea made of stramonium leaves. It may be given in tea or coffee, if desired, without the knowledge of the patient. Will relieve the appetite for tobacco as well as liquor.

4. **Ammonia.**—A teaspoonful or two of aromatic spirits of ammonia in a glass of water will aid in sobering the patient. May be repeated in 45 minutes if necessary.

5. **Ginger and Pepper.**—For delirium tremens force the patient to take strong coffee or milk and give a tea made with ginger and pepper.

6. **Tincture of Capsicum.**—Give the delirium tremen patient tincture of capsicum in teaspoonful doses.

7. **Bromo-Seltzer.**—For drunkenness take a dose of bromo-seltzer and go to bed.

INSANITY.

"Insanity is a departure from the normal mental status of the individual and this departure is due to some diseased condition of the brain or nervous system.

"It has been truly said that man is the product of his antecedents, multiplied by his environments.

"Mental abnormality is always due to either imperfect or eccentric physical development, or to effects of inborn or acquired physical disease, or to injurious impressions, either anti-natal or post-natal, upon that delicate and intricate physical structure known as the human brain. Some physical imperfections more than others give rise to mental derangements. Some persons, more than others, when affected by bodily ailment, tend to aberrated conditions of the mind. Some impressions more than others, are particularly unfortunate by reason of their corroding effects upon the brain tablets of a sensitive mind. To these natural defects and unnatural tendencies, we apply, in a general way, the term "The Insane Diathesis." This is a state or condition in mental pathology, corresponding to those diatheses so common in physical pathology, namely, the scrofulous, the cancerous, the scorbutic, the rheumatic, the gouty and the calculous.

"The insane diathesis is a general term applying to all those conditions which tend to the inception and growth of mental unsoundness. This diathesis may be inherited or acquired. In the former case it may be compared to the scrofulous; and in the latter, to the gouty diathesis.

"Those who are born to become insane do not necessarily spring from insane parents, or from an ancestry having any apparent taint of lunacy in the blood but they do receive from their progenitors, oftentimes, certain impressions upon their mental and moral, as well as upon their physical being, which impressions, like iron moulds, fix and shape their subsequent destinies. Hysteria in the mother may develop the insane diathesis in the child. Drunkenness in the father may impel epilepsy, or mania, or dementia, in the son. Ungoverned passions, from love to hate, from hope to fear, when indulged in overmuch by the parents, may unloose the furies of unrestrained madness in the minds of the children. Even untempered religious enthusiasm may beget a fanaticism that cannot be restrained within the limits of reason.

"As the development of progress is slow and gradual; so, likewise, is the development of degeneracy. As men attain high moral and intellectual achievements only through the effects of succeeding generations, so it seems but natural that the insane should oftentimes trace their sad humiliation and utter unfitness for the duties of life back through a tedious line of passion unrestrained, of prejudice, bigotry, and superstition unbridled, of lust unchecked, of intemperance uncontrolled, of avarice unmastered, and of nerve resources wasted, exhausted, and made bankrupt before its time.

"Here are dangers to the human race which potent drugs cannot avert. Here are maladies which medicines cannot cure. But the medical man, the

conservator of public health, realizing the dangers which threaten his community or state, may help, if he will, to parry those pathological blows which the present aims at the future; and, by timely warnings and appeals to his clients of today, may save them for his own treatment, instead of consigning them to an asylum where his own fees cease from doubling and the crazed ones are at rest." (Extracts from Seldon H. Talcott.)

Causes of Insanity.—Insanity is either inherited or acquired.

Inherited Insanity.—It may be inherited because of the high living, fast society and dissipation of the parents. Elbert Hubbard says of those who waste their substance upon a certain fashionable hotel air that they are apt "to have gout at one end, general paresis at the other and Bright's disease in the middle."

Hereditary influence is also caused by drunkenness, lust, fear, mental anxiety, or even incompatibility if admitted to participation in the act of impregnation, and these will often set the seal of their presence in the shape of idiocy, imbecility, eccentricity or absolute insanity.

Acquired Insanity.—Insanity is acquired by: (a) Imperfect nutrition. (b) By slight or almost imperceptible injuries to the brain, blows, and falls. (Stop boxing the ears of children.) (c) By those fears that are sometimes excited in the minds of young children for the purpose of government. (Such as ghost stories, etc.) (d) By overtaking the undeveloped physical powers. (As by the overworking of the young in factories, etc.) (e) By unwise forcing of the mind in its immature or undeveloped stage. (Such as crowding children too hard at school.) (f) By premature or unnatural excitement of the sexual organs of the young. (Masturbation, etc.) (g) By suppression of the ambitions and powers, and tastes, and desires, of the enthusiastic adolescent (youth). (h) By solitude. (Such as the life of a sheep herder which frequently causes melancholia which is a form of insanity.)

History of Insanity.—The earliest reference to insanity is found in the bible. Mention of it will be found in Deuteronomy, Samuel, Ecclesiastes and Jeremiah. Hippocrates was the first physician who seemed to have any true conception of the real nature of insanity.

Classification of Insanity According to Talcott.—

1. Melancholia, which includes all forms of mental depression.
2. Mania, which includes all forms of mental excitement.
3. Dementia, which includes all forms of mental weakness or failure except idiocy and imbecility.
4. General Paresis, which is a distinct form of mental disease possessing certain characteristics which demand that it shall be classified separately. In this form you will find conditions of mental depression, mental excitement and mental weakness; and in the course of this fatal disease you will find that it embodies and embraces some elements of all other forms of insanity.

Definitions.—

Delusion.—A delusion is a false belief.

Hallucination.—This is a sensation without an object. Thus it is said that an individual who hears voices when no sound strikes the ear, has an hallucination.

Illusion.—The victim may see a ball rolling on the floor and may fancy that it is an animal coming to destroy him.

Melancholia.—This is characterized by great depression.

Causes of Melancholia.—Predisposition, physical disease, dissipation, work and worry, shock from sudden loss of friends or fortune, brooding, disorders of faith, solitude.

Forms of Melancholia.—Simple, acute, sub-acute; chronic; melancholia with stupor, with agitation, with resistance; acute delirious melancholia and hypochondrical melancholia.

Mania.—This means a raving madness.

Causes of Mania.—Loss of property, mental anxiety, over-work, ill health, injury to the brain, sunstroke, insufficient sleep, etc.

Forms of Mania.—

1. Several forms; namely, acute, sub-acute (paranoia) and chronic.
2. Special forms; acute delirious, recurrent, periodic and circular.
3. Peculiar forms which are named from supposed causation—as from blows, masturbation, syphilis, puerperal fever, hysteria, climacteric, tubercular, etc.

4. Disputed forms such as monomania and moral mania.

5. Forms such as dipsomania, crotomania, nymphomania in women, satyriasis in men, kleptomania, pyromania, etc.

Paranoia.—The person affected is called a paranoiac. He has delusions of persecution or of ambition, grandeur, etc.

Dementia.—This means strictly “out of mind” or without mind. In dementia the faculties are simply enfeebled. In idiocy and imbecility they are imperfect.

Idiocy.—This is a congenital absence of both cerebral and mental power.

Imbecility.—This means a checked or arrested development.

General Paresis.—This formidable and fatal disease is a cosmopolitan type of all modern insanity and represents to the fullest degree the effects of toil, worry and intemperance in every shade and form. It is a deep seated, far reaching, intractable scourge which fastens its fangs upon the matured brains of its victims and rarely, if ever, yields its hold.

Causes of General Paresis.—There are comparatively few cases of general paresis where the causes may not be traced to over work in the field of worry, wine, and women. This disease usually develops between the ages of 25 and 50 years.

TREATMENT FOR INSANITY.—

No care or toil; soft, elastic and comfortable beds and pleasant, cheerful and sunshiny surroundings.

Preventive Treatment.—Avoid the causes.

“Bright surroundings, pleasant associations, stimulating encouragements, abundant food of the best and plainest quality, fresh air, and active exercise in the clear sunlight, together with the simple direction, not forcing, of the mental faculties, will, in the course of patient time, produce from even poor stock such a robust and cultured race as to be the astonishment of those who furnish and mould the material.”

CONSTITUTIONAL DISEASES.

CHRONIC RHEUMATISM.

Description and Symptoms.—This is a low grade of inflammation of the structures about the larger joints which results in pain, soreness, stiffness and disability of the parts and these are the main symptoms.

TREATMENT.—

Care and Prevention.—A person with rheumatism needs to be very careful of his habits. Flannel should be worn 9 months in the year. Care should be taken when wet to change the wet clothing as soon as you stop moving. You should not sweat and then sit down to cool off. You must not check the perspiration. When sweating, do not go into a cool room or sit down in the shade. One with rheumatism should not sleep on the ground floor as the bed is very likely to be damp. It is better to sleep up-stairs. Do not sleep in a bed that has not been slept in for weeks or months without airing. "Spare beds," such as you get when you go visiting, are not good for one with rheumatism or for any one else. All sleeping rooms should be well aired and dry. The same applies to the bed coverings. These little things count for much if you value your health as you should.

Local Treatment.—Fifty per cent. ichthyol ointment should be rubbed into the joints twice daily and may be alternated with chloroform liniment. Chloroform liniment consists of 4 drams of tincture of Belladonna, 2 drams of aconite, and 2 drams of chloroform. In other instances iodine ointment, diluted one-half with lanolin, may be used. Wear warm flannel next to the skin.

Springs and Baths.—Some of these do much good for those who can afford them. Among others there are good ones at Hot Springs in Arkansas, Virginia, South Dakota, Banff in Canada, Bath in England and in Michigan at Mt. Clemens, Battle Creek and Alma and in Wisconsin at Waukesha, etc. Turkish baths are sometimes beneficial.

Allopathic Treatment.—Take 5 grains of salicylate of soda 4 times a day. Iodide of potash may be taken in the same doses or it may be mixed with blood compounds composed of herbs.

Homeopathic Treatment.—The medicines used are the third dilution of Belladonna, the second dilution of Bryonia and the sixth dilution of Rhus Tox. (For preparation and dose see "Homeopathic Medicines" in Nursing Department.)

PEOPLE'S HOME REMEDIES FOR VARIOUS KINDS OF RHEUMATISM.—

1. **Celery.**—A lady in New York writes that an eminent physician of her state has achieved quite a reputation for his success in treating cases of chronic rheumatism. His remedy is nothing more nor less than the common garden celery. Boil some celery in water until it is quite soft and let the patient drink freely of the liquor three or four times a day. It is also beneficial when used as a food. Those suffering from rheumatism ought

not to despair of a cure until they have tried this simple but effective remedy.

2. **Whiskey and Vinegar.**—For painful joints apply equal parts of whiskey and vinegar.

3. **Cucumbers.**—Put some full-grown cucumbers into a pot over a slow fire; add a little salt and leave over the fire for an hour. Press the juice from the cucumbers, bottle tightly and place in the cellar for a week. Wet a flannel cloth with this liquid and apply to the painful parts.

4. **Eggs, Vinegar and Turpentine.**—For external use put 2 eggs into a pint of vinegar, shake well, and add $\frac{1}{2}$ pint of turpentine.

5. **Baking Soda.**—Take 1 even teaspoonful of common baking soda in a glass of cold water 3 times a day for 3 months. A lady living in Boston writes, "This treatment was ordered for myself by two doctors at the Carney Hospital, South Boston, Mass., when my arm was so bad that I could not get it to my head, and it cured me."

6. **Cayenne Pepper and Alcohol.**—Let a quarter of a pound of cayenne pepper stand for 10 days in a pint of alcohol and you will have one of the best liniments ever used for rheumatism.

7. **Sweet Oil and Saltpeter.**—In case of inflammatory rheumatism add a pint of sweet oil to half an ounce of pulverized saltpeter and bathe the affected parts.

8. **Liniment.**—To 1 pint of vinegar add $\frac{1}{8}$ pint of turpentine and into this break an egg, shell and all. Rub on the parts several times a day. A lady writes that this cured a friend of inflammatory rheumatism.

9. **Salicylate of Soda.**—Have some salicylate of soda put up in 5-grain capsules and take one capsule in water 4 times a day. This is much used by doctors for chronic rheumatism. Do not take it long enough to affect the stomach or heart.

10. **Bathing Drops.**—Take 2 teaspoonfuls of cayenne pepper and 1 ounce each of hemlock oil, gum myrrh and pulverized gum guaiacum. Shake well together and bottle for use. This is good for rheumatic pains or pains in the head, stomach or elsewhere. Bathe the parts night and morning.

11. **Potatoes.**—A lady living in France sends us a treatment which she says has cured many cases of sciatica. Boil a good-sized potato in a quart of water. Before going to bed bathe the affected parts in this water as hot as can be borne. Then mash the potato and bind on as a poultice. In the morning again heat the water, which should have been saved, and bathe the parts again. This treatment frequently cures in a few days but in some cases it may take several weeks.

12. **Blue Flag, Etc.**—For sciatica take 15 drops of the fluid extract of blue flag twice a day in a little water and three times a day rub thoroughly into the back part of the thigh a liniment made of equal parts of iodine and aqua ammonia.

13. **Sweating Treatment.**—In cases of acute rheumatism the first thing is to produce sweating. The warm vapor bath may be used for this purpose or the patient may be placed in a warm bed with bottles of hot water or ears of boiled corn around him. He should also drink freely of warm teas such as catnip, sage, pennyroyal or flaxseed.

14. **Poultices and Fomentations.**—If the joints are swollen and painful, apply either warm or cold fomentations of lobelia and hops, or hops and stramonium leaves; or, poultices of bran or flaxseed or rye meal. After

warm poultices are removed the parts should be covered with cotton batting or flannel.

15. **Stramonium Leaves.**—Bruise some fresh stramonium leaves, moisten with a little water and apply to the swollen or painful joints. Renew 3 or 4 times a day. This is recommended by both physicians and patients.

16. **Sulphur.**—Sprinkle some finely pulverized sulphur on a piece of flannel and bind on the limb with the sulphur next to the skin, then cover with cotton batting to keep the air away.

17. **Hot Water Cloths.**—Upon the first symptoms of rheumatism apply, thoroughly and persistently, cloths wrung out of hot water.

18. **Camphor, Ammonia, Etc.**—Take $\frac{1}{2}$ ounce of camphor, $\frac{1}{2}$ ounce of ammonia, $\frac{1}{2}$ ounce of sulphuric ether and $\frac{1}{2}$ pint of alcohol and apply externally by rubbing on the parts 2 or 3 times a day. This does not soil the clothing.

19. **For Rheumatism, Etc.**—Balsam tolu, gum guaiacum, gum hemlock and gum myrrh, of each, coarsely powdered, 2 ounces; oil of hemlock, 3 ounces; oil of wintergreen, 2 ounces; and alcohol, 1 gallon; mix, and allow them to steep for 2 weeks, frequently shaking. The dose is 1 dram or more in half a wineglassful of sweetened water. Besides rheumatism, this is also good for flatulent colic, acid stomach and water brash.

20. **Blue Flag.**—For rheumatism take blue flag, either alone or in combination. The dose of the tincture is from 10 to 20 drops and of the powder from 5 to 10 grains.

21. **For Chronic Rheumatism.**—Take 1 pint of whiskey and 1 dram each of cimicifugin, anthroxylin and apocynim. The dose is 1 tablespoonful 3 times a day.

22. **Black Cohosh.**—For acute and chronic rheumatism use from 5 to 10 drops of tincture of black cohosh every 2 to 4 hours. This is also a great remedy for womb troubles such as dysmenorrhea, leucorrhea, etc.

23. **Blue Cohosh.**—Blue cohosh is good for rheumatism of the small joints. The dose of the tincture is $\frac{1}{2}$ dram 3 times a day.

24. **Queen of the Meadow.**—A tea made from queen of the meadow is good for rheumatism from kidney troubles. The dose is 2 to 4 ounces 4 times a day.

25. **Prickly Ash Berries and Poke Berries.**—Prickly ash berries and poke berries, in the form of tincture or fluid extract, are very good for chronic rheumatism and tertiary syphilis. The dose is from $\frac{1}{2}$ to 1 dram.

26. **Lamp Oil, Skunk's Oil and Red Pepper.**—For chronic rheumatism take 2 ounces of skunk's oil, the same quantity of cheap lamp oil and 1 teaspoonful of red pepper; shake well together and bathe with a piece of flannel dipped into this mixture

27. **For Chronic Rheumatism.**—Mix thoroughly $\frac{1}{2}$ ounce of the finest turkey rhubarb and 1 ounce of carbonate of magnesia. Keep this well corked in a glass bottle. The dose for chronic rheumatism is 1 teaspoonful in milk and sugar the first thing in the morning. Repeat until cured. A lady in Birmingham, Alabama, says she has tried this with success.

28. **Lemon Juice.**—The juice of 2 lemons taken in half a glass of water before each meal is a good remedy for rheumatism.

29. **Sun Baths.**—Take sun baths for rheumatism.

MUSCULAR RHEUMATISM.

In this disease the muscles are stiff and sore.

TREATMENT.—

Allopathic Treatment.—Have the urine examined and if there is too much acid in it give from 10 to 20 grains of bicarbonate of potassium in water 3 or 4 times a day. In some cases common baking soda will do. Salicylate of soda is also good and may be taken 3 times a day in from 10 to 15-grain doses.

Homeopathic Treatment.—The medicines are the third dilution of Belladonna, the second dilution of Bryonia, or the sixth dilution of Rhus Tox. (See "Homeopathic Medicines" in Nursing Department for preparation and dose.)

PEOPLE'S HOME REMEDIES.—(See home remedies under "Chronic Rheumatism," also under "Lumbago and Weak Back.")

1. **Blue Flag and Gin.**—Buy five cents worth of blue flag root, let it stand in 1 pint of gin for 24 hours, and take a tablespoonful 3 times a day.

Physician's Remarks.—This acts on the disordered liver and the blood.

2. **Smartweed Tea.**—Bathe the parts thoroughly with a strong tea made of smartweed.

3. **Baking Soda.**—Every four hours give half a teaspoonful of common baking soda.

LUMBAGO.

Description and Symptoms.—This is muscular rheumatism of the back, or loins. It is very painful and occurs chiefly in working men. It comes on suddenly and in severe cases it "downs" the patient, who may be unable to turn in bed or to rise from the sitting posture. The pain shoots through the muscles of the back like lightning.

TREATMENT.—Allow rest, apply hot fomentations on the painful parts and wear warm clothes when well. Morphine may have to be given for the pain in some cases. Keep the bowels open.

Homeopathic Treatment.—Take the sixth dilution of Rhus Tox., third trituration of Tartar Emetic, third dilution of Belladonna or the second dilution of Bryonia. (For preparation and dose see "Homeopathic Medicines" in Nursing Department.)

PEOPLE'S HOME REMEDIES FOR LUMBAGO AND WEAK BACK.—

1. **Smartweed, Wormwood, and Vinegar.**—Apply hot fomentations of smartweed, wormwood, or vinegar and hops.

2. **Origanum, Wormwood, Camphor and Turpentine.**—Take an ounce each of oil of origanum, wormwood, gum camphor and turpentine. Put into a bottle and fill with alcohol. This is a fine liniment for a weak back.

3. **General Liniment.**—Take alcohol, spirits of camphor, aqua ammonia, tincture of aconite and chloroform, of each 2 ounces and spirits of nitrous ether, six ounces; mix, and keep well corked. This is an excellent liniment for backache, also for sprains, pains and bruises. This should not be taken internally.

4. **Turpentine and Kerosene.**—Rub with turpentine or equal parts of turpentine and kerosene. (Also see "Liniments.")

STIFF NECK.**Torticollis.**

Treatment.—Allow the parts to rest and apply a belladonna or a mustard plaster. Chloroform liniment is good and so is equal parts of chloral and camphor.

Homeopathic Treatment.—Use the third dilution of Belladonna, the second dilution of Byronia, the second dilution of Aconite, or the sixth dilution of Rhus Tox. (For preparation and dose see "Homeopathic Medicines" in Nursing Department.)

GOUT.**Podagra.**

Description.—In this disease there are deposits in the joints and surrounding tissues. The joint of the big toe is very commonly the most affected.

Causes.—The precise cause is unknown. Heredity, mode of life as to exercise and mental labor, high living, drinking, and age have much to do with it. Commonly, it does not develop until after the thirtieth year of age. Abuse of alcohol, over eating, and metal poisoning are among the causes.

Symptoms.—The attack usually consists of a sudden onset of sharp pain and inflammation of the ball of the big toe. The pain is very severe and stabbing, the part swells rapidly and the skin is red and hot. It usually develops after midnight. Though the inflammation is great there is never the formation of pus. The acute form is followed by little disability in the part after the attack.

TREATMENT.—Colchicine, iodine and the salicylates may be given in proper doses by a doctor. For acute attacks, wine of colchicine root, in 20 to 40-drop doses may be given every 6 to 12 hours. Unload the bowels first with from 10 to 20 grains of compound extract of colocynth. You can also give one dose of extract of hyoscyamus. The dose is from 1 to 2 grains.

A good lotion is the following: soda, 4 ounces; belladonna liniment, 4 ounces; tincture of opium, 1½ ounces, and water, 8 ounces. Equal parts of this and hot water should be used to saturate wool which has been rolled around the joint and the dressing should be changed every 4 hours.

Nursing and Diet.—Drink plenty of water. Exercise in the open air; golf is good. Do not use sweet wines, fats or rich foods.

PEOPLE'S HOME REMEDIES.—

1. **Saleratus and Stramonium Leaves.**—After holding the foot in warm saleratus water for 15 or 20 minutes, apply a poultice of stramonium leaves. This treatment will usually be found beneficial.

2. **Hot Bran Poultices.**—A warm poultice made of vinegar and bran or weak lye and bran will often give relief.

3. **Vinegar and Salt.**—Take some vinegar and put in all the salt it will dissolve. Apply with a soft flannel, rub with the hand, and dry by the fire. Bathe for 15 minutes 4 times a day. As improvement proceeds the number of daily applications may be diminished.

4. **Raw Onions.**—Eat a raw onion every morning for breakfast. It may be eaten with salt and vinegar if preferred.

OBESITY.**Fatness—Corpulence—Adiposity.**

TREATMENT.—Poke root berries may be given in tablet form but you must watch their effect.

Diet.—Exclude all sugars and sweet articles and all fat and richly prepared food. Give lean meat and vegetables which are bulky but contain little starch.

The following may be permitted—starch, lettuce, string beans, spinach, cabbage, cauliflower and a limited amount of tomatoes.

The following should be excluded—potatoes in large amounts, bread, peas, beans, and alcoholic drinks. If necessary order a more rigid diet. Do not allow all the food he desires but let the patient suffer a little from hunger. The following may aid in selecting a diet.

Breakfast.—Three ounces of lean meat, 1 ounce of bread without butter, and a cup of tea or coffee sweetened with saccharin. Use no milk or sugar.

Early Luncheon.—Eat a single soft-boiled egg with an ounce of bread.

Dinner.—Cup of clear soup, 2 ounces of fresh or salt fish and after this 2 or 3 ounces of lean meat. Also small quantities of the vegetables permitted may be taken. **Dessert.**—An apple, orange, pear or grape fruit.

Afternoon Luncheon.—Glass of milk or a cup of tea with a thick water cracker.

Supper.—Three ounces of lean meat, lettuce with oil or vinegar, celery, and 2 ounces of bread, or zweibach, or crackers.

BED TIME.—Biscuit and glass of milk.

SUGAR DIABETES.**Diabetes Mellitus.**

There are large quantities of urine passed and it contains sugar. There is thirst, excessive appetite, and nutrition is impaired and in some cases the patient steadily becomes emaciated, or thin. The presence of glucose in the urine does not necessarily mean that the person is afflicted with diabetes. The other conditions mentioned must also be present. The disease is much more common in Europe than in the United States.

Causes.—The cause is not yet definitely known.

Symptoms.—The symptoms vary greatly in different cases. The disease may exist for some time before the patient suffers very much. Generally, as the disease continues the patient notices that he passes urine more frequently and in larger quantities. He develops more or less thirst and loses sexual desire and power. Later he begins to feel languid and lazy. He is usually constipated and an excessive appetite is developed. The thirst, appetite, and loss of strength and flesh are usually in proportion to the quantity of the urine passed and the amount of sugar in it. When the patient passes much urine the tongue becomes glazed, dry, and raw in appearance. Sore throat and thrush may develop. The skin is dry and harsh and the hair brittle and without lustre. The pulse is feeble and the temperature below normal. The first symptoms of the disease may be repeated crops of boils or carbuncles. The stomach troubles are very annoying and depend upon the excessive eating and drinking. Extreme constipation is also often a troublesome feature. The disease is most fatal in persons under twenty-five years of age and may destroy life in a few weeks.

TREATMENT.—Drugs have a narrow limit in the treatment of this disease and especial care should be given to the diet. Keep the bowels open. Give vichy water in large quantities and 20 or 30 grains of soda may be given every 2 or 3 hours dissolved in vichy water. Opium diminishes the quantity of sugar. The deodorized form of opium is generally the best. Give $\frac{1}{4}$ grain, one, two or three times a day to begin with and gradually increase if necessary. In some instances from $\frac{1}{8}$ to $\frac{1}{4}$ grain of morphine is good and in other instances from $\frac{1}{2}$ to 1 grain of codeine as a beginning dose is good.

Nursing and Diet.—Much can be done for the control of this disease by proper attention to exercise and regulation of the diet. Sugars must not be eaten. Both salt and fresh meat (excepting liver), butter, cheese and the various oils and fats may be used. Fresh vegetables such as lettuce, spinach, dandelion, cabbage, cauliflower, brussels sprouts, string beans, celery, water cress, tomatoes, onions, cucumbers, etc., may all be eaten. Olives and the various kinds of pickles and particularly all the nuts, except chestnuts or nuts containing too much starch, may also be a part of the diet. Oatmeal gruel may be eaten for a week or two and then the patient should return to other foods for a time. Tea, coffee and cocoa should not be sweetened.

The bread should be made in the following manner. Mix 2 ounces of dried cocoa powder with a little water containing a small quantity of German yeast, make into a sort of paste and put in a warm place for half an hour or longer. Add 2 ounces aleuronat, 1 beaten egg and a small quantity of water in which a little saccharin has been dissolved. Mix all until a dough is formed. Divide into cakes and bake in a moderate oven for 20 or 30 minutes.

Carefully avoid sweet fruits such as melons and grapes and those vegetables which contain a very large amount of starch and sugar. Rice, sweet potatoes, beets, beans, peas and carrots contain sugar and starch and should not be eaten. Potatoes are the best form of starch which can be eaten by the patient with sugar diabetes.

PEOPLE'S HOME REMEDIES.—

1. **Bugleweed and Unicorn Root.**—Keep the bowels open with some mild cathartic, such as rhubarb, and drink frequently of a tea made of equal parts of bugleweed and unicorn root.

2. **Diet.**—Eat nothing except beef and bread made from gluten flour.

3. **Ergot.**—A noted French physician used the fluid extract of ergot in small teaspoonful doses three times a day.

DIABETES INSIPIDUS.

Description.—In this disease the patient passes a large quantity of water but with no sugar. The disease is more common in males than in females and is more common under the age of thirty years.

Symptoms.—There is a very excessive flow of urine. Then there is constant thirst, a dry mouth, and a very dry and wrinkled looking skin. Many cases recover from this disease.

Treatment.—Drug treatment is unsatisfactory. Care and attention should be given to the stomach, liver, bowels and kidneys so that they can do good work.

SKIN DISEASES.

(Including Tumors, Cancers, Carbuncles, Boils, Etc.)

TUMORS AND CANCERS.

Sarcoma—Carcinoma—Sarcomata—Carcinomata.

A tumor is a neoplasm, that is, a new growth. It originates from pre-existing tissues, except when they are meta-static (moving). Tumors are benign and malignant. A benign tumor is usually composed of tissues resembling those in which it originates. A malignant tumor usually consists of tissues widely different from those in which it originates. The kinds of tumors are: fibrous, fatty, cartilaginous, osseous or bony, muscular, vascular, vascular or erectile, nerve and lymphatic.

Cancers and Malignant Growths.—If an operation is to be performed it should be performed early. Tumors in the breast should be carefully watched. An injury will make them grow faster. Injury causes many of them to become malignant. If they are all taken out early the result is good. The trouble is that people wait too long. I do not believe in operations unless they are absolutely necessary but when they are necessary, the sooner they are performed, the better.

Cancer of the womb or of the lip should be operated on early. Cancer of the lip is frequently caused by the pipe and especially by a hot pipe. Cancer in the throat, and oftentimes on the tongue, does not give such good results from operation.

Do not let every physician use the X-Ray on you for tumors or cancers. Some are helped but many are terribly injured. Only an expert should use this for any growth.

Technically speaking, medicines do not yet cure cancers though many so-called cancers are cured. For these, a number of good home remedies are given.

PEOPLE'S HOME REMEDIES FOR CANCERS, TUMORS AND ULCERS.—

1. **Egg, Soot and Arsenic.**—Mix the white of an egg with wood soot to make a paste; add 10 grains of arsenic and of this make a plaster and apply to the cancer. When it breaks or is killed, apply a slippery elm poultice and keep on until all is removed and the sore is healed. A man living near Zanesville, Ohio, has removed a number of cancers from various people with this plaster and this receipt was obtained from a relative of the man who has been so successful with it.

Physician's Remarks.—In using arsenic you must watch its effects very carefully.

2. **Poke Root Poultice.**—Roast some poke root in hot ashes until soft, then mash and make a poultice with hot water. This is not only good for tumors but is a most excellent application for caked breasts.

3. **Sheep Sorrel.**—An old Indian doctor living in Oregon has been very successful in treating cancer by bruising sheep sorrel upon brass and applying as a poultice as long as the patient can bear it. He alternates this

with a bread and milk poultice but always leaves the sorrel on as long as possible. This treatment is continued until the cancer is drawn out by the roots. The writer knows of two persons who were cured in this manner after their physicians had pronounced a cure impossible. It is also well to drink a tea made of the sheep sorrel.

4. **Wild Parsnip.**—Take the common wild parsnip roots, simmer on the stove till thick like paste, spread on a piece of chamois skin, and apply to the cancer. The man sending us this recipe says the cancer will come out by the roots and the sore may then be healed with any good ointment.

5. **Red Clover Blossoms.**—The extract of red clover blossoms has been used by physicians to cure many cancers. It thoroughly cleanses the blood of its impurities and may be used for cancer of the stomach as well as on the surface. Instead of using the extract you can make a tea of clover blossoms and drink of it freely.

6. **Egg and Salt.**—Take the yolk of an egg and stir in salt as long as it will receive it. Mix this with the white of the egg to form a salve. Twice a day put a part of this on some sticking plaster and apply to the cancer.

7. **Beeswax, Lard, Verdigris and Snuff.**—Melt 1 ounce of beeswax, add 1½ pounds of lard, and stir in 1 ounce of verdigris and ½ pound of Scotch snuff and apply as a plaster. Good for cancers, tumors and ulcers.

8. **Poke Root.**—Apply a plaster made from the dried juice of the leaves of the common poke root. Many cures are reported as the result of the application of poke root.

ABSCESS.

Description.—An abscess is a circumscribed collection of pus (matter).

Causes.—Abscesses are usually caused by the presence of pus germs in the tissues.

Symptoms of Acute Abscess.—There is local swelling and pain and frequently a chill or a gradual rise of temperature. Finally the parts soften and the pus reaches the surface.

TREATMENT.—Painting with tincture of iodine sometimes helps. Use hot fomentations as soon as there is pus. In some places there is great danger in delay, especially when the abscess is near a joint. To bring it to a head use a bread and milk poultice with a little catnip added; or, a flaxseed, corn meal or slippery elm poultice. For an adult from ½ to 1 teaspoonful of laudanum may be put into the poultice if there is much pain.

How to open an Abscess.—Use a knife that has been placed in boiling water for at least five minutes. Wash the parts thoroughly with a linen or gauze cloth dipped into water that has been boiled. Some antiseptic should be added to it if you have it. Do not squeeze the abscess much. Syringe it with hot water or an antiseptic and a clean syringe. You can put 15 or 20 drops of carbolic acid into a cup of water and syringe with this. Use antiseptics like listerine, etc., if you have them, but boiled water will do. After you have thoroughly cleansed the abscess, put some absorbent cotton on it, cover it over with a little gauze, and fasten with adhesive plaster; or, if you do not have these things, use carbolized salve on linen, or even salt water will do, and cover up. You must take this care and especially when the abscess is located near a joint or on the neck. Most of the common abscesses get well after opening, with little treatment, but

they often leave a bad scar. An abscess under the jaw must be carefully opened because there are so many blood vessels in that region.

PEOPLE'S HOME REMEDIES.—

1. **Flaxseed and Bread and Milk Poultices.**—An abscess may be drawn to a head by poulticing with flaxseed, or bread and hot milk; or, hot water compresses may be used.

Physician's Remarks.—Local applications for an abscess, to draw it to a head, if they are to be of any benefit must possess heat, moisture, and some drawing power. Something like laudanum or poppy heads is frequently needed to relieve the pain. The above remedies have heat, moisture and some drawing power.

2. **Fomentations.**—Apply fomentations of marshmallow, chamomile flowers, poppy heads or hemlock leaves.

Physician's Remarks.—Poppy heads and chamomile flowers relieve the pain and marshmallow allays the inflammation.

3. **Iodine.**—Paint the affected parts with iodine and repeat once a day until a cure is effected.

Physician's Remarks.—This is a good remedy when applied early.

4. **Tomatoes.**—Boil some tomatoes and thicken with meal or bran. Apply to the abscess and keep on warm for two days.

Physician's Remarks.—This poultice has moisture, the corn meal has heat and the tomatoes contain an acid which is astringent and helps to draw. The word astringent is frequently used in medicine. It means the power to check discharges, whether of blood, mucus or any other secretion. Astringents act by contracting the tiny blood vessels and secreting orifices. The chief astringents are sugar of lead, nitrate of silver, tannic acid (tannin), gallic acid, sulphate of zinc, kino calectin, dilute mineral acids, and alum. Tea contains tannin and is therefore an astringent. Oak bark is also an astringent.

5. **Diet and General Treatment.**—There is no objection to the use of poultices such as ground flaxseed, slippery elm, bread and milk and such like, during the forming stages of an abscess, but they should never be used in case of a fully matured and discharging abscess. Washing with warm water and castile soap and the use of simple dressings are best. In many cases a nourishing diet is strictly demanded together with such other means as will tend to strengthen the system; but when an abscess occurs in a robust person, with a predisposition to inflammatory diseases, the diet should be restricted to the simplest kind. This applies to internal as well as external abscesses.

CARBUNCLES.

Description and Symptoms.—A carbuncle is a very painful inflammation of the lower or true skin. The painful part begins to swell, harden, and discolor, generally assuming a purplish color. After 5 or 6 days little openings form in the swollen and discolored place, from which there issues a yellowish, mattery substance. The swelling and hardness continue to increase in circumference. Only a little matter comes from each hole but these holes gradually widen and run together until by degrees a considerable portion of the skin is entirely destroyed; or, the outer skin may be raised in a greenish blister which finally breaks. We now see the dead tissue underneath; the matter discharges more freely and large pieces of the dead

tissue slough off with it. The loss of flesh may amount to several inches. Carbuncles are much more destructive and dangerous than are boils. They appear most frequently on the back of the neck, along the spine, on the forehead and on the buttocks and aged people are chiefly affected with them. When they appear with diabetes they are hard to heal and usually mean death.

Treatment.—Open thoroughly and deeply with a sharp, clean knife which has been placed in boiling water for at least five minutes before using. Make two cuts, crosswise; then dress twice a day and scrape out all the dead tissue. Some advise burning out the dead tissue with carbolic acid but this might be dangerous in aged people. All dressing must be done cleanly. Have at hand some absorbent cotton, gauze and adhesive plaster. After dressing, wet the cotton with some antiseptic solution like listerine and place this on the carbuncle and cover with more cotton and gauze and fasten in place with the adhesive plaster. The dressing is done by washing the part well with cotton, gauze, or clean linen which is dipped into some antiseptic solution like listerine. Use some antiseptic, if possible, but if there is none within reach, use boiling water. Dig out the dead tissue with a clean, boiled instrument, syringing if necessary with an antiseptic solution or peroxide of hydrogen, full strength. Clean and re-dress the carbuncle frequently.

PEOPLE'S HOME REMEDIES.—

1. **Salt and Turpentine.**—Bind salt upon the carbuncle and keep it wet with turpentine.

2. **Flaxseed Poultice.**—Poultice with flaxseed meal.

Physician's Remarks.—This contains heat and moisture and through its sedative properties is soothing to the carbuncle. This is also true of the slippery elm poultice.

3. **Slippery Elm Poultice.**—Apply a poultice of slippery elm bark to the carbuncle.

4. **Egg, Turpentine, Camphor and Flour.**—Take the yolk of an egg, two tablespoonfuls of turpentine, a teaspoonful of pulverized camphor gum and enough flour to form a paste. Bind this on the carbuncle with a piece of muslin.

Physician's Remarks.—The yolk of an egg is right lively in its drawing powers.

5. **Tannin.**—A man in North Dakota cured some very bad carbuncles with tannin. He sprinkled as much into the openings as would dissolve and in 24 hours washed them with castile soap; this treatment he continued until cured.

Physician's Remarks.—Tannin is an astringent, lessens the discharge, and allays the odor.

6. **Yolk of Egg.**—If you desire something to draw, nothing better will be found than the yolk of an egg mixed with salt.

7. **Carbolic Acid.**—Crude carbolic acid is sometimes used for carbuncles but should be used with great care.

8. **Egg, Sugar and Flour.**—Take the yolk of an egg, 1 teaspoonful of white sugar, and 1 teaspoonful of flour; mix well together and bind on as a poultice. This will not increase the pain.

Physician's Remarks.—This is good for getting rid of the dead tissue of a carbuncle.

9. **Bread and Milk Poultice.**—A bread and milk poultice is both drawing and soothing.

10. **Wild Cherry, Burdock, Yellow Dock and Dandelion.**—Make a strong tea of equal parts of wild cherry bark, and the roots of burdock, yellow dock and dandelion. Sweeten and take a tablespoonful three times a day. This is to get the blood in good condition.

11. **Smartweed.**—Poultice the carbuncle with smartweed.

BOILS.

Furunculosis.

Description.—A boil is an inflammation of a spot in or under the skin and there is the formation of pus as a result of this inflammation. Boils frequently appear in persons suffering with sugar diabetes.

TREATMENT.—Tincture of iodine painted on boils sometimes stops them if applied early. You can poultice with flaxseed meal or with a bread and milk poultice to which a little catnip has been added. Have the poultices just large enough to thoroughly cover the boils and keep them hot. The application of poultices should be stopped when the boil comes to a head and it should be opened. Burdock, yellow dock, leptandrin and sarsaparilla are all good to take internally for the blood. When they come with diabetes they are hard to cure. If you have many boils or carbuncles you should have the urine analyzed for sugar. Keep the kidneys and bowels working well.

Allopathic Treatment.—Apply two per cent. salicylate ointment twice daily. Internally take $\frac{1}{4}$ grain of calcium sulphide four times a day. At first paint the sore with collodion and renew the coat every hour until a heavy covering is formed. If pus forms it must be opened. The poultices should contain sweet oil, and if there is much pain they should contain laudanum. Alcohol and camphor applied locally are good in the first stages. When boils occur in the external ear, syringe the canal frequently with hot water and open the boil when it is ripe. The following ointment will be found excellent for the pain. To 1 dram of petrolatum add 4 grains of iodoform and 2 grains of menthol. Smear this on some cotton and put into the ear two or three times a day.

PEOPLE'S HOME REMEDIES.—

1. **Chamomile Flowers.**—A poultice of chamomile flowers will draw a boil to a head so that it may be opened.

Physician's Remarks.—A chamomile poultice holds heat and moisture for a long time and it has a sedative, or quieting and soothing, action on the local parts which is due to its oily constituents.

2. **Castor Oil and Lime Water.**—"Apply castor oil freely to the boil and at the same time take lime water to cleanse the blood of its impurities," writes a lady who has tried it.

Physician's Remarks.—The calcium in the lime water is what aids in purifying the blood.

3. **Corn Meal, Onions and Soap.**—Take 1 cupful of corn meal, 2 large onions cut up fine, and 2 ounces of laundry soap; mix, and apply as a hot poultice.

Physician's Remarks.—This poultice not only has heat and moisture, which are desired, but the soap and onions have drawing power.

4. **Onion Poultice.**—Apply an onion poultice. Fry some onions in lard and use soft and hot.

Physician's Remarks.—This contains three things to be desired; namely, heat, moisture and drawing power.

5. **Flaxseed or Linseed Meal Poultice.**—Apply a flaxseed or linseed meal poultice. This retains heat and moisture for a long time.

6. **Onions.**—Fry some onions in lard and mix with a little softened beeswax. Apply to the parts.

7. **Brown Paper.**—Burn some brown paper and apply to the boil.

8. **Iodine.**—The application of tincture of iodine in the first stages will often scatter or dry up the boil.

9. **Lily Poultice.**—Boil some white lily root, make a poultice, and apply to the boil.

Physician's Remarks.—Adding laudanum to any of the above remedies will lessen the pain.

10. **Camphor.**—Apply spirits of camphor freely.

11. **Carbolic Acid.**—Apply diluted carbolic acid to the parts. Use with care.

FELON.

Run-Around—Whitlow—Paronychia—Panaradium.

There are two kinds—the superficial and the deep seated.

Description of Superficial Variety.—This kind is generally seated immediately around and beneath the finger nail, commencing either at the side, the back, or the end of the finger. It is of a dusky red, tender, and very painful on pressure and throbs violently and continually but is not swollen much. Two or three days later matter is seen under the outer skin and sometimes it is also under the nail. These are the kind of felons that can be stopped with such remedies as the home remedies given below.

Description of Deep Seated Variety.—In this variety the deeper structures are affected and the pain is terrible. The tough covering of the bone is affected and pus appears next to the bone and underneath this tough covering and the swelling is what causes the terrific pain. There is but one thing to do for this kind of felon and that is to open it early and thoroughly. If you do not do this you will suffer terribly for days and nights and may lose the use of a joint or have a crippled finger or hand. However, if opened properly, one opening is all that will be necessary, unless the felon comes in the palm of the hand where deep opening is dangerous on account of the blood vessels.

How to Open a Felon.—Have a curved knife with both edges sharp and it should be placed in boiling water for at least 5 minutes before using. Place the patient's hand on the table with the felon side up and this is usually the palm. Put the patient's arm away from the body and stand behind the elbow. Put the knife carefully on the finger a little ways from the felon and on the side nearest the hand. Call the patient's attention to something at the other side of the room and while he is looking away press down hard with the knife and as you press down he will jerk and thus make the cut long enough. As the table is solid he cannot jerk down away from the knife and the cut will go through the covering of the bone as desired and in 10 minutes there will be very little pain. The knife must go through the tough membrane which covers the bone or you will hurt the patient without doing him any good. Have a sharp knife, a solid table, and press hard, as it will not hurt any more and it will all be over in two seconds. As a general

thing, I would discharge any doctor who saw a bone felon early and had to open it more than once. Placing the hand on the table is essential; the sharp knife and pressure will do the rest. Remember that you must cut deep enough to go through the periosteum, or covering of the bone. The pus is between this covering and the bone and you must make an opening for it. If you do not, it will, after many days and nights of suffering, burrow through, and destroy much flesh.

PEOPLE'S HOME REMEDIES FOR FELONS.—

1. **Egg and Salt.**—To prevent a felon apply the white of an egg with $\frac{1}{2}$ teaspoonful of salt added. If applied in time no one need have a felon.

2. **Sugar, Lime, Whiskey and Kerosene.**—To draw a felon to a head nothing is better than to take brown sugar and unslaked lime in equal parts and add enough of a mixture of equal parts of whiskey and kerosene to make a salve. Bind this on the felon and in 24 hours it will be ready to open.

3. **Indian Turnip, Bread and Milk.**—Take either the green or the dried root of the Indian turnip which is commonly called Jack in the Pulpit; grate a teaspoonful into eight tablespoonfuls of sweet milk; simmer for a few minutes; thicken with bread; and apply like a poultice as hot as can be borne. This is good for both felons and carbuncles.

4. **Salt and Turpentine.**—Take equal parts of finely powdered dry rock salt and spirits of turpentine and apply to the felon, changing as it becomes dry.

5. **Camphor and Gunpowder.**—Bind some gun powder on a felon and keep it wet with spirits of camphor and relief will be obtained in 2 or 3 hours.

6. **Weak Lye Water.**—Keep the finger in a cup of weak lye which is kept as hot as can be borne. If too tiresome, rest and try it again. It will save weeks of suffering and may save a finger.

7. **Turpentine.**—Wrap the finger with cloth and keep thoroughly wet with turpentine for two or three days. Begin when the felon first appears.

8. **Salt and Vinegar.**—Take pure vinegar, heat it, add a little salt and hold the finger in it as hot as can be borne.

9. **"Hound's Tongue."**—Bruise the leaves of "hound's tongue" and apply hot. Change when dry.

10. **Fly Blister.**—A fly blister the size of the thumb nail will draw the felon to a head in 5 or 6 hours when it may be opened and the pus let out.

11. **Lye Water, Soap and Turpentine.**—Soak the finger or affected part for half an hour in strong lye, or ashes and water, as hot as can be borne. Do this 2 or 3 times a day and apply a poultice of soft soap and turpentine. If the felon comes to a head, lance it, poultice with lye and elm bark, and heal with some good salve.

12. **Egg, Turpentine, Soap, Salt and Meal.**—Take the yolk of an egg, 10 drops of spirits of turpentine, a small quantity of hard soap, and a teaspoonful each of burnt salt and Indian meal; mix, and apply to the felon.

13. **Turpentine and Flour.**—Take a little Venice turpentine, thicken it with wheat flour and apply as a thin plaster.

14. **Soap and Brown Sugar.**—A plaster made of equal parts of soap and brown sugar is good when applied to a felon.

15. **Honey and Flour.**—Take a little honey and stir in wheat flour to make a paste and apply this to the felon as a plaster.

WENS.

Description.—Wens are encysted tumors varying from the size of a small pea to the size of a walnut or even an orange. They are generally movable. They very often appear on the head and frequently get sore from combing and brushing.

Treatment.—They are harmless unless they get sore. They may easily be taken out with a knife. They may also be eaten out with salve made of equal parts of fine salt and the yolk of an egg but it will take some time.

ULCERS.

Treatment.—Burnt alum is good for ulcers and for proud flesh. Witch hazel is a good application for ulcers on the legs. Apply lime to old lazy ulcers that need life. Either tannic acid or strong white oak bark are good for some. Apply peroxide of hydrogen when there is much mucus-pus. Also apply a hot pack to liven them up.

PEOPLE'S HOME REMEDIES.—(Also see "Home Remedies for Cancers, Tumors and Ulcers.")

1. **Potato and Charcoal.**—Apply a poultice of equal parts of scraped raw potato and finely powdered charcoal. The lady from whom this recipe was obtained says that her son had a foul sore of long standing on his leg and that different physicians doctored him without success. She at last accidentally ran across this recipe in an old medical book and decided to try it with the result that the sore was entirely healed up and has not appeared again.

2. **Bread, Flaxseed and Charcoal.**—Let an ounce of bread stand in 5 ounces of hot water near the fire for 10 minutes and add 5 drams of powdered flaxseed and two drams of charcoal, thus forming a soft poultice. This will be found excellent for ulcers.

3. **Slippery Elm.**—A slippery elm poultice is a good application for ulcers.

4. **Sugar, Alum, Bluestone, Etc.**—A lady living in Canada sends the following recipe which she says will cure ulcers or old sores. Put into a quart bottle six drams of loaf sugar, 4 drams of alum, $2\frac{1}{2}$ drams of bluestone, 1 dram of sugar of lead and 1 tablespoonful of honey; then pour in a pint of vinegar and shake several times a day until it is dissolved. Apply 3 times a day. Weaken with water when you first apply it as it will smart.

Physician's Remark.—This treatment will be found good.

WARTS.

Take 30 grains of salicylic acid and 1 ounce of vinegar; mix, and apply frequently. Or, they may be burnt out with either nitric or sulphuric acid. Apply the acid with a match or tooth pick and do not get it upon the surrounding parts. Apply pitch of the arbor vitæ tree; or, get some tincture of thuja occidentalis at the drug store and apply that. Thuja is especially good for very large warts.

PEOPLE'S HOME REMEDIES.—

1. **Arbor Vitæ.**—Rub the wart frequently with the gum from the arbor vitæ tree.

2. **Milkweed.**—Bruise milkweeds and apply the milk that runs from them to the warts several times a day and they will soon come off.

3. **Ashes and Vinegar.**—Burn some common willow bark, mix the ashes with strong vinegar and apply frequently.

4. **Sal Ammoniac.**—Moisten a piece of sal ammoniac and rub on the wart thoroughly every night and morning.

5. **Acetic Acid.**—Cut away the dry hard skin and touch them once or twice a day with strong acetic acid. Be careful not to let the acid touch the surrounding skin.

6. **Sulphur and Alcohol.**—Mix thoroughly 'half an ounce of sulphur with the same quantity of alcohol and apply freely once or twice a day.

7. **Cinnamon Oil.**—Apply it several times a day for a week or more. A lady living at Garrettsville, Ohio, says she cured a seed wart with this. It must be used some time but will effect a cure.

8. **Rosin Weeds.**—The milk from rosin weeds frequently applied, will remove warts.

9. **Iodine.**—The application of iodine will remove warts.

10. **Baking Soda.**—Dissolve enough common baking soda in water to make it thick, rub on the wart as often as you please and it will soon disappear. A lady living in Birmingham, Alabama, writes, "I have seen this tried many times and always with success."

PEOPLE'S HOME REMEDIES FOR BUNIONS.

1. **Stream of Water.**—Let a stream of very warm water fall from a teakettle directly upon the swelling. Let the water fall as far as the patient can stand it and repeat every day until cured.

2. **Boracic Acid.**—Sprinkle boracic acid in the shoes.

3. **Iodine.**—"Paint with iodine night and morning and the soreness will soon be relieved. I cured two bunions in this way," writes a lady from Garrettsville, Ohio.

4. **Salicylic Acid.**—Apply salicylic acid to the parts.

5. **Flaxseed and Smartweed.**—Apply poultices or fomentations of smartweed.

6. **Turpentine.**—Apply cloths wrung out of turpentine.

7. **Saltpeter and Sweet Oil.**—A well tried remedy is to dissolve five cents worth of saltpeter in some sweet oil and rub the joint every night and morning. Use more frequently if the bunion is very painful.

CORNS.

Apply the following formula night and morning for several days. Take salicylic acid, 30 grains; extract cannabis ind., 10 grains and collodii, $\frac{1}{2}$ ounce. Apply with a camel's-hair brush. After it has been applied for several days, soak the corn in hot water and it will come out. For soft corns, first wash and dry the parts and then apply a solution of nitrate of silver, using 60 grains of silver nitrate to an ounce of water. Apply every 4 or 5 days.

PEOPLE'S HOME REMEDIES.—

1. **Lemon.**—A lady writes from Georgia saying that she has cured several corns by binding on a piece of lemon at night and leaving until morning. Two or three applications are all that are needed.

Physician's Remarks.—This will be found to be an effective treatment in many cases.

2. **Tobacco and Pine Pitch.**—Boil some tobacco to make an extract, mix with white pine pitch and apply to the corn. Renew once a week until the corn is gone.

3. **Potato Skins.**—Place the inside of the skin of a boiled potato to the corn and let it remain for 12 hours.

4. **Boracic Acid.**—Sprinkle boracic acid in the shoes for either corns or foot sweating.

5. **Vaseline and Camphor.**—Mix vaseline with camphor and apply frequently.

6. **Bran and Vinegar.**—Soak some bran in cider vinegar and bind on the corn for three nights.

7. **Camphor, Kerosene and Turpentine.**—Put ten cents worth of camphor gum into a half pint bottle and fill with equal parts of kerosene and turpentine. Apply night and morning and the soreness will soon be relieved.

8. **Adhesive Plaster.**—Put adhesive plaster on the corn and wear for some time. It relieves the pressure and consequently the pain.

9. **Alum and Turpentine.**—Apply either alum water or turpentine for corns.

10. **Hot Water.**—Soak the corns daily in hot water for some time and then carefully take away the loose tissue.

11. **Oil of Peppermint.**—A little oil of peppermint rubbed over a sensitive corn relieves the soreness in a remarkable way.

12. **Camphor.**—For soft corns apply, 2 or 3 times daily, a piece of cotton wet with tincture of camphor and keep cotton between the toes until the corns have entirely disappeared.

13. **Ivy and Vinegar.**—Soak a piece of ivy in vinegar and bind on the corn at night. In the morning the corn may be picked out unless it is an obstinate one when it may require 2 or 3 applications to effect a cure.

14. **Turpentine.**—Wrapping a piece of linen wet in turpentine about the toe night and morning will cure soft corns.

15. **Shoes.**—Preventive treatment is best. Wear shoes that fit you. Don't crowd a number eight foot into a number four shoe.

SWEATING OF FEET.

Bromidrosis.

Apply belladonna ointment at night for adults. Watch for a dry throat and enlarged pupils for these indicate the use of too much belladonna. A teaspoonful of boric acid to a cup of water is good as a wash. The ointment is very good for chapped hands and face and also for sweating feet and hands. It should be applied at night. Either salicylic or boric acid are good when dusted over the parts. Or, you can use an ointment made of equal parts of salicylic acid and powdered corn starch.

NIGHT SWEATS.

From 1/250 to 1/60 of a grain of atropine may be used once a day but should only be prescribed by one who has knowledge of its action. Give twenty to thirty grains of camphoric acid an hour before time for the sweating to begin. Give this in capsule form. It will be found good and is safer than the atropine.

Homeopathic Treatment.—The second dilution of China and the third dilution of Phosphoric Acid are good when continued for some time.

PEOPLE'S HOME REMEDIES.—

1. **Nutmeg, Alum, Cloves, Etc.**—Take one good-sized nutmeg, a lump of alum of the same size and a teaspoonful of cloves; pulverize all and add to half a pint of brandy or good whiskey. Dose—A tablespoonful 3 times a day, shaking well each time before using.

2. **Sage Tea.**—Drink freely of cold sage tea. The warm sponge bath should be used at night and cold sponging of the body in the morning on rising. Wipe dry each time and make use of severe friction or rubbing with a coarse dry towel.

3. **White Oak Bark—Vinegar and Whiskey.**—Bathing the body occasionally with a weak decoction of white oak bark will be found serviceable. Vinegar and whiskey are also good for this purpose.

4. **Blood Root.**—Five drops of acetic blood root taken 3 times a day is a good remedy for night sweats.

5. **Whiskey and Quinine.**—Mix whiskey with about two ounces of quinine, shake it up and sponge off every night.

CHILBLAINS.

Cabbage leaves are a good application for chilblains. Either alum water or turpentine is good as a wash. If the parts are unbroken either tincture of capsicum or prepared paper of capsicum may be applied. A salve made of rosin and ichthyol ointment is good. Iodine and lard in equal parts will also give relief.

PEOPLE'S HOME REMEDIES.—For Chilblains and Frostbites.

1. **Starch.**—Moisten some powdered starch and rub on the parts to stop the itching.

Physician's Remarks.—Starch is not only an important element of food but is a good application for burns and scalds.

2. **Lime Water and Kerosene.**—Apply lime water and kerosene in equal parts. After the blisters break apply flaxseed or bread and milk poultice.

3. **Kerosene.**—Wet a cloth with kerosene and apply to the affected parts.

4. **Potatoes and Salt.**—Slice some raw potatoes, leaving the skins on; sprinkle a little salt over them and wash the chilblains with the liquid that settles in the bottom of the dish.

Physician's Remark.—The chief virtue in the potatoes is the starch and the salt helps to draw this virtue from them.

5. **Brandy and Salt.**—Rub the parts with brandy and salt. This reduces the inflammation and hardens the skin. Some very obstinate cases have been cured by this treatment.

6. **Alum.**—Dissolve a little alum in some water, bathe the affected parts and warm before the fire. Two or three applications will give relief.

7. **Hot Salt Water.**—Once a week bathe the feet and hands in hot salt water. This is both a preventive and a cure.

8. **Vinegar and Salt.**—Bathe the parts every evening before going to bed with hot vinegar in which there has been dissolved a handful of salt.

9. **Turpentine and Sassafras.**—Morning and evening apply a solution of an ounce of turpentine and three-eighths of an ounce of oil of sassafras. The turpentine may be used alone if the sassafras is not at hand.

10. **Boracic Acid.**—Sprinkle boracic acid in the shoes.

11. **Carbolic Acid.**—Put 4 or 5 drops of carbolic acid into a teacupful of rain water and bathe the affected parts 2 or 3 times a day.

12. **Care and Treatment.**—If one has been badly frozen keep him away from the fire and thaw out the parts slowly. First rub them with snow, then flannel and lastly with the hands; then bathe the parts frequently with witch hazel.

CHAPPING.

Mix 2 drams of lycopodium with 3 drams each of subnitrate of bismuth and zinc oleate. Apply 3 times a day to hands or cheeks that are chapped from exposure to cold or wet. Cold cream and camphor are also very good.

Mix 2 drams each of pulverized calaminæ and pulverized zinc oxide with 4 drams of glycerine, 2 ounces of alcohol and enough water to make a pint. This is for chafing of infants. Apply with a soft cloth after each removal of the diaper and allow to dry. This is good where there is diarrhea and irritating urine.

PEOPLE'S HOME REMEDIES.—For Chapped Hands and Face.

1. **Cosmoline.**—A lady living in Missouri says that cosmoline applied to chapped hands, face or lips is one of the very best things she has ever used.

Physician's Remarks.—I think that lanolin is more penetrating and will go in deeper than the cosmoline. Either one is good.

2. **Beeswax and Sweet Oil.**—Dissolve a small piece of beeswax in a little sweet oil. Two or three applications while warm will effect a cure.

3. **Quince Seeds, Borax and Glycerine.**—To 12 ounces of warm water add ½ ounce of quince seed, let stand for several hours until thick, and strain. Dissolve ¼ ounce of powdered borax in a little of this mixture and stir in with the rest. Add 2 ounces of glycerine and any perfume desired. This is excellent for softening the hands.

Physician's Remarks.—Quince seed oil and glycerine are both quite soothing.

4. **Glycerine, Bay Rum, Camphor, Etc.**—Take equal parts of glycerine, bay rum, camphor, listerine and lemon juice and mix together. Apply to the hands while moist. This is from a woman living at Nelson, Ohio.

Physician's Remarks.—Glycerine keeps the hands soft and prevents cracking and chapping; camphor is very good for chapped or rough hands; the listerine is an antiseptic wash and lemon juice acts as an astringent and is a little hardening.

5. **Hog's Lard.**—Chapped hands can generally be cured by keeping clean and applying hog's lard. Keeping the hands clean is a good preventive and especially with children.

6. **Glycerine, Bay Rum and Rose Water.**—A mixture of glycerine, bay rum and rose water makes a good lotion. A few drops of bergamot added will give it a nice odor. Massage with the lotion while moist and dry with a towel.

7. **Alum, Boracic Acid, Etc.**—Take ½ ounce each of gum tragacanth, powdered alum and boracic acid; 4 ounces of glycerine; 6 ounces of alcohol and 1 pint of water or enough to make this solution like cream. Perfume with any favorite extract. Soak the gum tragacanth in a quart of soft water for two days, beat up well until all lumps disappear, strain, and add to the mixture.

8. **Glycerine and Arnica.**—Mix five cents worth of glycerine with a dime's worth of arnica and apply to the chapped parts.

9. **Alcohol, Glycerine, Vinegar and Lemon Juice.**—To an ounce each of alcohol and glycerine, add 4 ounces of either vinegar or lemon juice. This is good when it is desired to harden the hands a little.

10. **Rose Oil and Glycerine.**—Immediately after washing apply a mixture of rose oil and glycerine.

11. **Alcohol, Glycerine and Borax.**—Mix two ounces of alcohol, 2 ounces of glycerine, 1 ounce of solution of borax, 1 ounce of rose water and 2 ounces of distilled water. A lady living at Manhattan, Kansas, says: "I have used this for years and it has proven excellent both for the hands and face."

12. **Glycerine, Alcohol, Quince Seed, Etc.**—Mix 4 ounces of rain water, 4 ounces of rose water, 2 ounces of glycerine, 1 ounce of alcohol, $\frac{1}{2}$ ounce of quince seed and 2 grains of morphine. A lady living at McKees Rocks, Pa., says she has used this for years and knows of nothing to compare with it.

13. **Glycerine, Rose Water and Carbolic Acid.**—Use equal parts of glycerine and rose water with a few drops of carbolic acid added.

PEOPLE'S HOME REMEDIES FOR SUNBURN AND TAN.

1. **Buttermilk and Bran Tea.**—Wash the face before retiring with buttermilk and in the morning wash with weak bran tea with a little cologne added.

2. **Strawberries.**—"Rub crushed strawberries over the face at night," writes a lady who has tried it

3. **Elder Flower Tea and Cologne.**—Put a few drops of cologne into some elder flower tea and bathe the face for sunburn.

4. **Borax.**—Dissolve half an ounce of pulverized borax in half a pint of water. Bathe the parts twice daily.

5. **Cream.**—Cold fresh cream frequently applied will remove sunburn.

6. **Cucumbers.**—Slice some cucumbers and let them stand in water for some time. Wash the face and hands with this water.

7. **Lemon Juice.**—Apply lemon juice for sunburn.

IVY POISONING.

A solution of sugar of lead may be used but I generally apply sugar of lead in the powdered form. Dust it freely over the poisoned parts but do not let any of it get into the eyes.

PEOPLE'S HOME REMEDIES.—For Ivy and Oak Poisoning.

1. **Alcohol and Sugar of Lead.**—Equal parts of alcohol and solution of sugar of lead are excellent for ivy poisoning. Powdered sugar of lead may be used alone if desired.

2. **Starch and Glycerine.**—For poisoning from poison vine or poison bark, first bathe the parts in water as hot as can be borne, then apply a small quantity of starch to which has been added enough glycerine to form a paste. A physician writes that he has never known this remedy to fail.

3. **Soda.**—Either baking or washing soda mixed with enough water to form a paste will usually kill the poison of poison ivy vine or poison oak in 2 or 3 days

4. **Prescription for Oak Poisoning.**—In California poisoning from the poison oak is very common. A professor at the city of Ackland in that state gives us the following prescription which is to be applied to the parts 3 or

4 times a day. It consists of glycerine, 2 ounces; and grindelia robusta, 2 drams. This will be found excellent for this poisoning.

5. **Sweet Spirits of Nitre, Lobelia and Olive Oil.**—Apply sweet spirits of nitre, tincture of lobelia, and olive oil. Clearweed is also good. Bruise and rub it on the parts. The people sending these receipts live at Middlefield, Ohio, and say, "We have used these remedies so we can recommend them."

6. **Wood Betony Plant.**—Steep the wood betony plant, including the leaves and blossoms if it is in bloom, in hot water and apply to the poisoned parts. A lady in Brooklyn, Ohio, says, "I have used this in my own household and told others of it, and have never known of its failing to give relief in a single instance."

7. **Quick Lime.**—An antidote for poisoning by dew, poison oak, poison ivy, etc., is to take a handful of quick lime, dissolve it in water, let it stand half an hour, then paint the poisoned parts with it. Three or four applications will never fail to cure the most aggravated cases.

8. **Beans.**—For external poisoning take the leaves of the common soup bean and bruise them to a pulp; apply to the affected parts and change every hour. The dry beans ground up and mixed with water are just as good.

PEOPLE'S HAIR TONICS AND RESTORATIVES and HOME REMEDIES FOR BALDNESS AND DANDRUFF.

1. **Quinine Hair Tonic.**—Take quinine sulphate, $\frac{1}{2}$ dram; glycerine, $\frac{1}{2}$ ounce; alcohol, 2 ounces; tincture of cantharides, 1 dram; tincture of capsicum, $\frac{1}{2}$ dram; aromatic ammonia, 4 drams; and bay rum, 2 ounces. First dissolve the quinine in the glycerine. Apply twice a week to keep the hair from falling. This receipt was kindly given us by a barber at Hiram, Ohio.

2. **Hair Tonic.**—To 16 ounces of bay rum add 2 ounces of tincture of cantharides, $\frac{1}{2}$ ounce sulphate of quinine and $\frac{1}{2}$ ounce of oil of rosemary; dissolve in enough spirits of wine to make it smooth.

3. **Hair Tonic.**—Put 20 grains of quinine and a tablespoonful of fine salt into a pint of best bay rum and add an ounce of tincture of cantharides. Apply every morning and night.

4. **Sage Tea.**—Make some sage tea and rub on the scalp every night for one week; then wash the hair and repeat. It is claimed this will grow hair as well as prevent its falling.

5. **Borax and Camphor.**—Take a quart of boiling water; add an ounce of pulverized borax and half an ounce of powdered camphor; apply once a week with a sponge or flannel and it will prevent the falling of hair.

6. **Saltpeter.**—To a quart of water add a piece of saltpeter the size of a hickory nut and wash the head daily.

7. **Onion Juice and Pearl Ash.**—To a pint of water add 1 gill of onion juice and one ounce of pearl ash and wash the hair with the solution.

8. **Onion.**—Rub the bald parts of the head with an onion.

9. **Preventive of Baldness.**—Take two ounces of castor oil, 2 drams of oil of rosemary, 15 drops of the essential oil of bitter almonds and 3 drams of the tincture of Spanish fly. Mix, and rub a little thoroughly into the scalp. This is a preventive for baldness.

10. **Sulphur Water.**—To a quart of water add an ounce of sulphur and shake frequently. Wash the head thoroughly every morning with the clear

liquid and in a few weeks every sign of dandruff will be gone and the hair will be left soft and glossy.

11. **Borax and Camphor.**—Wash the head with a mixture composed of an ounce each of borax and camphor and a pint-and-a-half of cold water. After each washing rub in a little pure olive oil. This is for dandruff.

12. **Olive Oil.**—Rub a little olive oil into the scalp every 4 or 5 days.

13. **Egg Shampoo.**—A shampoo with raw egg will remove all the dandruff.

14. **Borax Water.**—Wash the head occasionally with a little borax water. This will thoroughly clean the hair and remove the dandruff.

PEOPLE'S HOME REMEDIES FOR FRECKLES.

1. **Bitter Almonds and Barley Flour.**—Bitter almonds and barley flour, in equal parts, applied in the form of paste will remove freckles.

2. **Borax, Sugar and Lemon Juice.**—Put into a bottle $\frac{1}{2}$ dram of powdered borax, 1 dram of sugar and 2 ounces of lemon juice. Let stand for several days, then rub the face three times daily.

3. **Glycerine and Lemon Juice.**—"Tan and freckles may generally be removed with equal parts of glycerine and lemon juice," writes a lady who is in the habit of spending her summers at the sea shore where one usually gets a good coat of tan.

4. **Buttermilk.**—Wash the face every morning in fresh buttermilk, then rinse in warm water and dry with a soft towel.

5. **Horseradish.**—Let some grated horseradish stand for five hours in some very sour milk. Use this as a wash every night and morning.

6. **Strawberries.**—Crush some strawberries and rub them over the face at night just before going to bed.

7. **Saltpeter.**—Freckles may sometimes be removed by wetting a piece of saltpeter and rubbing the freckles 2 or 3 times daily.

8. **Borax and Lemon Juice.**—Add a little borax to some pure lemon juice. Have the face and hands clean and bathe for a long while each day with this mixture.

9. **Buttermilk.**—One of the best things for freckles is to apply sour buttermilk at night, let it dry on the face and wash off in the morning.

ACNE, PIMPLES AND BLACKHEADS.

Acne is an inflammation of the sebaceous glands. The contents of these glands project above the surface, forming blackheads. This frequently occurs at the time of puberty and often afterwards. Use green, or castile soap on the face night and morning and follow with brisk rubbing. If this irritates you can use cerate or emulsion of sweet almonds. From 1/10 to $\frac{1}{2}$ grain of sulphurated lime is good taken internally three times a day.

For inflamed acne take 30 grains of iodide of sulphur and 1 ounce of simple cerate; mix, and apply to the parts night and morning.

For monthly acne, occurring at the time of the menses, mix 1 dram of sulphur, 1 ounce of glycerine and enough water to make 8 fluid ounces. Apply 2 or 3 times daily and avoid all rich foods. You can also take 20 or 30 grains of sulphur internally 3 times a day as an alterative; or, as a laxative, take from 1 to 2 drams in molasses at night.

PEOPLE'S HOME REMEDIES.—

1. **Sulphur.**—Take out-door exercise, avoid rich foods, and three times

a week take a thimbleful of sulphur in a glass of milk before breakfast. Be careful not to take cold while taking the sulphur.

2. **Borax Water.**—Keep the bowels open and sponge the face every night with hot borax water.

ECZEMA.

Salt Rheum—Impetigo—Intertrigo.

This name covers a number of skin diseases. It is a wide-spreading inflammation of the outer surface of the skin causing numerous little vesicles upon an inflamed and irregular surface. Sometimes these vesicles are intermingled with pustules, then it is called impetigo. Sometimes the outer skin is actually thrown off leaving a raw moist surface, then it is called intertrigo.

TREATMENT.—Avoid salty foods, salt fish, pork, corned beef and greasy foods such as bacon, fried dishes, pastry and cheese. Be in the fresh air as much as possible and take plenty of exercise. You should use rubber gloves if you have to wash dishes.

Allopathic Treatment.—If on the head the hair must be cut close. In the early stages apply oxide of zinc ointment night and morning. This should be used in connection with black wash which is made by adding 1 dram of calomel to 1 pint of lime water. This should be applied just before the zinc ointment and allowed to dry. Use a swab to apply it with.

In other cases powdered oxide of zinc is dusted over the part if the discharge is very watery and profuse; or, the following ointment may be used. Mix 1 ounce of bismuth oxidii, 8 ounces of acidi oleici puri, 3 ounces of cera alba, 9 ounces of petrolati, and 5 drops of olei rosæ. Apply to the affected parts. It is best to have just half of the quantity given put up at one time.

Sometimes the crusts must be removed by poultices; or, if on the face, anoint with olive oil containing one or two drops of phenol to the ounce. This is to soften the crusts which may readily be removed in half an hour with soap and water. Do not use soap if the parts are too much inflamed.

When the acute form has passed use 1 dram of ointment of tar and 6 drams of zinc oxide ointment. Mix these and apply to the parts to excite the skin to action.

Homeopathic Treatment.—The remedies are Hepar Sulph., Graphites Sulph., Rhus Tox. and Arsenicum. (For preparation and doses see "Homeopathic Medicines" in Nursing Department.)

PEOPLE'S HOME REMEDIES.—

1. **For Eczema.**—Apply the following ointment twice daily. Take red precipitate, $1\frac{1}{2}$ drams; Venice turpentine, $\frac{1}{2}$ ounce and fresh butter 2 ounces. Also take blood root, 1 ounce and yellow dock root, 1 ounce; put these together in $\frac{1}{4}$ pint each of alcohol and vinegar and let stand a week. Apply this twice a day also.

2. **Milk Crust.**—For milk crust give sulphur and cream of tartar internally and apply either glycerine or thick cream to the parts externally.

3. **Scald Head.**—Bran water is a good wash for the head. Or, wash the parts with warm water containing corn meal or oatmeal; wipe dry and apply a mixture of stramonium ointment, 1 ounce; and carbolic acid, 10 grains. Let this stand over night.

4. **Sulphur, Beef Marrow, Turpentine and Pepper.**—Apply an ointment

made by thoroughly mixing equal parts of sulphur, beef marrow, white turpentine and black pepper. The parts may be cleaned with oatmeal water.

5. **Oatmeal Water, Iodine, Sweet Cream and Carbolic Acid.**—A fine treatment for skin diseases is to cleanse the parts with oatmeal water, dry, and bathe with tincture of iodine. Let this dry of itself and apply sweet cream and carbolic acid. One drop of the acid should be added to a teaspoonful of the cream. This has cured many obstinate cases. It costs but little to prepare and is well worth trying.

Physician's Remark.—Do not use iodine too freely nor too often.

6. **Sassafras and Lard.**—Boil for half an hour a pound of swamp sassafras bark in enough fresh water to cover it. Take out the bark and use the water as a wash. Add some lard to some of the water and simmer until the water is evaporated and after each washing anoint the parts with the lard. You may expect a cure in 4 or 5 days.

7. **Strawberry Leaves.**—Lay the woolly or outer side of strawberry leaves upon the parts affected. If laid on thick and occasionally changed they will draw out the inflammation and cure tetter.

8. **Sugar of Lead.**—Put $\frac{1}{2}$ teaspoonful of sugar of lead into water and apply freely.

9. **Potato Water.**—Boil potatoes with the skins on and apply the water in which they were boiled. Apply 3 or 4 times a day. "I know this to be a success," writes a lady from Columbus, Ohio.

ITCH.

Scabies.

This is an eruption produced by a parasite and is very "catching." It covers the body in parts but is seen chiefly between the fingers where it often makes a raw surface.

Treatment.—Sulphur ointment is a sure cure. This should be applied at night. First soak the parts thoroughly with soap and water, rub with a hard rough towel to uncover the parasites, then apply the ointment thoroughly and let it remain on all night. The towel used should at once be boiled to kill the parasites and prevent the spreading of the disease.

PEOPLE'S HOME REMEDIES.—

1. **Sulphur and Lard.**—Apply sulphur ointment which is made by taking two parts of lard and one part of milk of sulphur.

2. **Sulphur and Lime.**—To five parts of water add two parts of sulphur and a quart of freshly slaked lime. Boil in a porcelain dish, stirring constantly, until the mixture is the color of cinnamon. Keep well corked and apply to the affected parts about once a day.

3. **Sulphur.**—Give sulphur three times a day in the form of powder, tincture or pellets and apply sulphur ointment to the affected parts.

4. **Blood Root and Vinegar.**—Keep the bowels open. To relieve the itching and dryness of the skin take 1 ounce of blood root and $\frac{1}{2}$ pint of vinegar; steep for two hours; strain, and paint the affected parts once or twice a day with the liquid. Every night before going to bed apply glycerine freely.

BARBER'S ITCH.

Tineo Sycosis.

Carbolic acid may be applied locally but it is likely to leave a scar. Mix 1 dram of iodine crystals and 1 ounce of goose grease and apply night and morning until some redness appears.

PEOPLE'S HOME REMEDIES.—

1. **Barber's Prescription.**—The following treatment is from a barber at Hiram, Ohio, and is said to be excellent for this disease.

Fluid.—Take 1 ounce of resorsin, 1 ounce of glycerine, 1 ounce of water, 1½ ounces of lac sulphur, ½ ounce of cologne and 4 ounces of alcohol. To make the preparation more pleasant dissolve the sulphur in ½ ounce of ether before adding to the mixture.

Ointment.—Take 15 grains of tannic acid, ½ dram of precipitated sulphur and 5 drams of petrolatum.

Directions.—Apply the liquid several times a day with a soft sponge and bathe the parts every morning with hot water. The ointment is not to be used until the scabs have formed. It is then to be applied immediately after each application of the liquid. The purpose of the ointment is to keep the parts soft.

2. **Lard, Gunpowder, Sulphur and Alum.**—Cleanse the parts with castile soap suds and apply the following ointment. Put into an earthen dish ½ pint of unsalted lard or fresh unsalted butter and add 2 tablespoonfuls each of gunpowder, sulphur and alum, each powdered. Stew slowly for 24 hours, strain, and it is ready for use.

3. **Carbolic Acid.**—Take a tooth pick, put the end into clear carbolic acid and apply to each pimple. When the burning stops keep the sores well greased with some good healing salve. A lady writes from Independence, Iowa—"About seven years ago my son had this disease in the worst form and after six weeks' treatment with one of our best doctors, my son cured it himself with this treatment."

4. **Lard and Sulphur.**—Apply equal parts of lard and sulphur.

Physician's Remarks.—I believe this treatment will be found better for the common itch than for barber's itch.

SHINGLES.

Herpes-Zoster.

Description and Symptoms.—This disease spreads along the tracks of certain nerves of the skin. It commences at the spine and runs around the ribs to the breast bone. It also appears on the neck, face and temples. The disease is nearly always preceded by rheumatic pains or neuralgia in the parts affected, fever, and weakness. There is burning in the parts, then redness, then the cluster of vesicles appears. Crusts form in 4 or 5 days and this ends the attack unless a new crop appears.

TREATMENT.—I am always a little afraid of the use of strong local applications in this disease. Keep the bowels open with salts, eat a light diet and meet the indications.

Homeopathic Treatment.—The second dilution of Aconite, the first dilution of Gelsemium, and the third trituration of Hepar Sulph. are the medicines. (See "Homeopathic Medicines" in Nursing Department for preparation and doses.)

PEOPLE'S HOME REMEDIES.—

1. **Sassafras, Burdock and Yellow Dock.**—Regulate the bowels with a mild cathartic and take freely of a decoction of sassafras, burdock and yellow dock root. At night bathe with warm saleratus water.

Physician's Remarks.—The above herbs are good for the blood and liver.

2. **Warm Lard.**—Bathe the affected parts with warm lard.

3. **Elder Flower Ointment and Oxide of Zinc.**—Use an ointment made by adding 1 dram of oxide of zinc to 1 ounce of elder flower ointment.

Physician's Remarks.—This is a good soothing ointment.

RINGWORM.

Tinea Circinata—Also Ringworm of Neck and Head.

TREATMENT.—Apply locally a strong solution of borax. This is also good for ringworm on the neck and head.

Another good treatment is to mix 1 dram of iodine crystals with one ounce of goose grease. Apply this night and morning until some redness of the skin appears when it is to be used but once a day. You may have to use it for weeks. Turpentine applied with a brush is also very good. A bichloride of mercury tablet dissolved and applied is very good. Use 1 part of mercury to 500 parts of water. It is poisonous and irritates quickly. Can generally use it twice a day. Stop when it makes the parts sore. Equal parts of tar and suet are good but tar stains badly. Citrine ointment, 1 part and vaseline 7 parts, is also good.

Ringworm on the Head—*Tinea Capitis*.—Apply lime water locally.

Ringworm on the Neck.—Apply the iodine or the borax as directed above. Pure oil of cajeput applied locally is another good remedy.

PEOPLE'S HOME REMEDIES.—

1. **Tobacco, Lye and Vinegar.**—Boil tobacco leaves; add strong lye and vinegar to the liquid and apply locally. This is an excellent remedy.

2. **Alcohol and Walnut Hulls.**—To half a pint of alcohol add a handful of green walnut hulls and let it stand five or six days. Apply this tincture externally to either ringworm or tetter. Also put a teaspoonful of this tincture into half a tumblerful of water, stir it well and take a teaspoonful internally every hour. Make this fresh every morning and take for 3 or 4 days.

3. **Alum and White of Egg.**—Make a curd by mixing alum with the white of an egg in a vessel over the fire. One or two applications of this will cure ringworm.

4. **Indian Corn.**—Sprinkle grains of Indian corn on a red hot shovel and press them with a cold flatiron. The corn will burn and leave an oil on the flatiron. Rub the ringworm with this oil.

Remarks.—In the collection of these home recipes, out of the hundreds received, it is but natural that a few of a superstitious nature should be received. For instance, here is a recipe for ringworm. "Have a pregnant woman wash the affected parts with her saliva before breakfast with her left-hand little finger and this will make it disappear." We might add that this is to be mixed with an equal part of good strong faith and even then we believe some of the other remedies given will prove more satisfactory. All recipes of this character we have carefully eliminated. We have thus discarded many of the recipes received, some of which may be good in many cases, but there were so many good ones that we have kept none but the very best and they will be found of real practical value.

GANGRENE.

Mortification.

This is death of a part of the body in a mass. In surgery, when referring

to the death of bone the term "necrosis" is generally used. There is the dry and the moist gangrene.

Dry Gangrene.—Dry gangrene, or mummification, is a condition produced by a loss of water from the tissues. The skin becomes black and wrinkled and is often of a leather-like hardness. The most typical form is senile gangrene, or gangrene of old age. This occurs in the lower extremities, feet and toes and is generally due to hardening of the arteries.

Moist Gangrene.—This is caused by a checking of the blood supply or by obstruction of the return of the blood through the veins. This is frequently caused by wounds, fractures, etc.

TREATMENT.—For dry gangrene, keep up the strength of the system and ease the pain if possible.

For moist gangrene, have a physician keep the parts thoroughly cleansed with disinfectants.

Home Remedy.—Dissolve some saltpeter in strong vinegar, dip a cloth in it and lay on the affected parts.

PEMPHIGUS.

This comes in the form of blebs, or watery blisters. The acute form is attended with pretty high fever and the patient feels quite sick. It lasts about two weeks and is sometimes fatal. This disease does not occur often.

TREATMENT.—

Allopathic Treatment.—Give 5 drops of Fowler's solution of arsenic at meal times.

Homeopathic Treatment.—The sixth dilution of Rhus Tox. and the third dilution of Cantharis given every hour are the remedies. (See "Homeopathic Medicines" in the Nursing Department for preparation and doses.)

PSORIASIS.

This is a chronic inflammation of the skin. It causes a mere redness and the outer skin seems to get sickly and drops off in scales. Use an ointment made of equal parts of ammoniate of mercury (hydrargyri ammon) and lard. Apply once a day. Also, to soften the scales use the following after taking a bath. Take 1 dram of chrysarobin, 1 ounce of collodium and enough ether and alcohol to make a solution. Apply to the affected parts with a brush. Do not apply it to the face and do not use it if there is a raw surface.

Take 5 drops of Fowler's solution of arsenic 3 times a day.

INGROWING TOE NAILS.

Apply solution of potassa hydroxide to soften the nail. Then soak a pledget of absorbent cotton in strong alum water and place this under the nail. If it pains much to do this, apply pure phenol with a brush a few minutes before placing the cotton under the nail. This will ease the pain caused by turning up the nail.

PEOPLE'S HOME REMEDIES.—

1. **Scraping Nail.**—Scrape the top of the nail until it is very thin and press a small piece of cotton batting under it.

2. **Lard or Tallow.**—Hot lard or tallow poured under the side of the nail is an excellent remedy for this trouble.

3. **Care of Nails.**—Trim the nails straight across; do not cut the corners

down in and do not cut the cuticle from the side of the nail. Scrape the top of the nail thin and cut a notch in the center. This, growing together pulls the nail away from the sides where it is painful.

LIVER SPOTS.

Apply oxide of zinc ointment once a day.

PEOPLE'S HOME REMEDIES FOR HIVES OR NETTLE RASH.

Urticaria—Wheals.

1. **Camphor, Saffron, Etc.**—Bathe the body with equal parts of soft water and camphor. Drink a tea made of saffron and spearmint and keep the bowels open with sulphur, 1 part; and cream of tartar, 2 parts; mixed with a little molasses.

2. **Saleratus and Salts.**—Bathe with saleratus water and keep the bowels open with salts.

3. **Cream of Tartar and Sugar.**—A teaspoonful each of cream of tartar and sugar dissolved in a glassful of water and taken each morning before breakfast will purify the blood and cure the hives.

Physician's Remarks.—Cream of tartar acts upon the kidneys and bowels.

4. **Sweet Oil and Lime Water.**—To stop the itching bathe with equal parts of sweet oil and lime water.

5. **Twinberry Bark.**—Peel the bark from twinberry branches; make a tea and drink of it moderately and the hives will disappear.

6. **Alcohol and Rose Water.**—Mix $1\frac{1}{2}$ ounces of alcohol with 4 ounces of rose water and apply externally.

7. **Wheat Flour and Saffron or Sage Tea, Etc.**—Whenever the eruption appears rub the body with wheat flour and let the patient drink freely of saffron tea or sage and sassafras teas. When getting better give the following physic. To three parts of cream of tartar add one part of sulphur; mix with molasses and give a teaspoonful three times a day for several days. Or, give a dose of salts or senna.

8. **Diet, Etc.**—Warm saleratus water is a good application for the skin. Drink water but no heating drinks. Eat gruels, dry toast, baked apples and stale bread but no meat.

9. **Magnesia, Cream of Tartar and Milk.**—Mix half a teaspoonful each of magnesia and cream of tartar in half a teacupful of milk and take every morning before breakfast until cured.

Physician's Remarks.—This acts on both the kidneys and the bowels.

10. **Ginger and Rhubarb.**—Mix $\frac{1}{2}$ pound of finely powdered ginger with 1 ounce of finely powdered rhubarb. The dose for children is about half a teaspoonful and for grown people a teaspoonful or more.

Physician's Remarks.—This keeps the bowels regular and casts out the poisons.

PEOPLE'S HOME REMEDIES FOR PRICKLY HEAT.

1. **Cream of Tartar, Saleratus Water, Etc.**—Give cream of tartar to cool the blood. Half a teaspoonful once a day is sufficient for a two-year-old child. Bathe the patient in warm water in which a little soda has been dissolved. Apply fresh unsalted grease to the pimples and dust over with pulverized starch.

2. **Soft Soap.**—Rub some common soft soap into the parts and let it dry.

DISEASES DUE TO ANIMAL PARASITES.

PIN WORMS—THREAD WORMS—SEAT WORMS.

(For symptoms see "Round Worms.")

TREATMENT.—Inject soap and water into the bowel and after it has passed, inject a pint of warm water in which there has been boiled from $\frac{1}{2}$ to 1 ounce of quassia chips. I think, though, that the following will be found better. Put 1 ounce of quassia chips and $\frac{1}{2}$ ounce of salt into a pint of water and let it stand over night. Inject very slowly all that the bowels will hold. Repeat once a week until all are removed.

Another remedy is to inject an infusion of garlic for two or three nights in succession. Put a small bunch of garlic into a pint of water and steep down to $\frac{1}{4}$ pint.

Cina and How to Use It.—For worms, and especially pin, or seat, worms, get the homeopathic tincture of cina and give 1 drop four times a day until the child is better. Begin again whenever necessary. This is also good for worms in puppies. You can give them 2 or 3 drops at a time. Cina will also destroy round worms in people. For these you should give about 3 drops 4 times a day. It seems to cut the worms into small pieces. It is well to give a physic about every third day when this medicine is being used. The homeopathic tincture should be bought of a homeopathic doctor or at a drug store where they keep homeopathic medicines.

PEOPLE'S HOME REMEDIES.—

1. **Salt Water.**—Drink salt water in the morning, using a tablespoonful of salt to half a pint of water. Also use salt water as an injection.

2. **Sulphur.**—Take a tablespoonful of sulphur, or enough for a laxative, and it will bring them away. A lady at Garrettsville, Ohio says, "I have tried this and so have my friends."

3. **Turpentine and Sugar.**—A drop of turpentine on a teaspoonful of sugar is good when troubled with worms.

4. **Egg Shells and Molasses.**—Take a quantity of egg shells, dry them, pound to a fine powder, add New Orleans molasses to make a thick paste and take $\frac{1}{2}$ teaspoonful three times a day. The lady sending this receipt says, "I have used this for my daughter and for myself and the results were entirely satisfactory."

5. **Wormseed and Molasses.**—Mix molasses and wormseed and give to children in teaspoonful doses. A grown person may take $1\frac{1}{2}$ teaspoonfuls.

6. **Spearmint Tea.**—Pin worms may be removed by using spearmint tea both as a drink and as an injection.

7. **Boneset, Etc.**—Take 2 scruples of aloes, 15 grains of carbonate of potassa, 3 fluid drams tincture of asafetida and $\frac{1}{2}$ pint of infusion of boneset; mix, and use as an injection for pin worms.

8. **Balmony, Mandrake and Asafetida.**—To $\frac{1}{2}$ pint of water add 4 drams of balmony and 2 drams of mandrake root; make a decoction, strain, and add 3 fluid drams of tincture of asafetida. For a child 2 or 3 years old, use about half of this quantity at a time and repeat if necessary.

9. **Wormseed.**—Use wormseed. The oil of wormseed is best. Give from 4 to 8 drops with sugar morning and evening for 4 days in succession, and follow with a cathartic. Or, you can use the tincture of wormseed, giving 1 drop 4 times a day.

10. **Quassia.**—Make a tea by steeping quassia chips in water for 12 hours and use this as an injection.

ROUND WORMS.

Symptoms.—Disturbed sleep, grinding the teeth in the sleep, irritable disposition, changeable appetite, picking the nose, red cheeks but white around the mouth. If they are seat worms the child frequently scratches the rectum.

Treatment.—Cina is a good remedy and you will find the form and dose explained in the treatment of pin, or thread, worms.

For removing round worms I generally use pills made of equal parts of santonine and calomel. Each pill should contain $\frac{1}{10}$ grain of each of these. Give three pills a day for 2 days; leave off for 2 days; give again for 2 days and repeat in this way until the worms are all eradicated. Afterwards I always give the second trituration of china in sugar discs. Take from 1 to 4 times a day for a month.

PEOPLE'S HOME REMEDIES.—

1. **Tansy and Boneset.**—A tea made with either tansy or boneset is an excellent remedy for worms.

2. **Turpentine.**—Give from 10 to 30 drops of turpentine in a little sweetened gruel. Give but one dose.

3. **Pink Root and Senna.**—Make a tea of equal parts of pink root and senna leaves, sweeten with sugar and let the child drink freely in the morning.

4. **Worm Mixture.**—Take $\frac{1}{2}$ ounce of pink root, 2 drams of senna, $\frac{1}{2}$ dram of savin and 2 drams of manna; mix, and steep in a pint of boiling water and strain. The dose is from $\frac{1}{2}$ to 2 fluid ounces.

5. **Garlic.**—Give $\frac{1}{2}$ dram of garlic juice; or, you can make a syrup from garlicks and use that. If used too freely it will produce flatulence, headache and fever.

TAPE WORM.

Treatment.—Eat no food for 18 hours before giving the remedy and for the 24 hours before this the diet should be very light. After giving a tape worm remedy the bowels should be moved with salts.

One of the best remedies is to bruise 3 or 4 ounces of pumpkin seeds and then allow them to stand in water for 12 or 14 hours. Take the entire quantity and follow with a cathartic.

A good remedy is the mixture of the following infusion and emulsion. To make the infusion take $\frac{1}{2}$ ounce of pomegranate root, 1 ounce of pumpkin seeds, 1 dram of powdered ergot, and 10 ounces of boiling water. For the emulsion take a drachm of the ethereal extract of male fern made with acacia powder and add 2 drops of croton oil. Mix the infusion and the emulsion and take at 9 o'clock in the morning while fasting. The previous day you should have eaten very little and you should have taken a dose of salts in the evening.

Or, take from $\frac{1}{2}$ to 1 drachm of oleoresin of aspidium. This may be

given to an adult in emulsion or capsule form and followed in 4 or 5 hours with epsom or rochelle salts.

Another remedy is pelletierine. From 3 to 5 grains may be given under the same conditions. Castor oil can be given for this but not after oleoresin of aspidium has been given. Castor oil aids in the absorption of the drug into the body and this might cause poisoning.

Another remedy is to make a tea of the bark of the pomegranate root. Take 3 ounces of the bark, macerate in 10 ounces of water and then reduce this one-half by evaporation. Give the entire quantity in divided doses. Follow in an hour with a purge.

PEOPLE'S HOME REMEDIES.—

1. **Blue Flag.**—The juice of blue flag is good for expelling tape worm.
2. **Garlic.**—Eat garlic and salt freely and every other day give a purgative of mandrake root and the worm will vacate the premises.
3. **Pumpkin Seeds.**—The following treatment has expelled many tape worms and is almost certain. Eat four ounces of pumpkin seeds at night on an empty stomach. The next morning steep the same quantity of seeds in hot water and drink the tea. Eat nothing until noon. The treatment may be repeated the next night but it is seldom necessary. Follow this with a laxative.

Remarks.—A woman in Berea, Ohio, says her sister had a tape worm that none of the doctors seemed to be able to expel. It was so ravenous that it would wake her several times a night. To allay the gnawing she would have to feed the tape worm by eating lumps of sugar. She tried the pumpkin seeds and expelled many yards of the worm. Pumpkin seeds are probably the best remedy known for expelling tape worms. By the doctors they are called "pepo."

FLEAS.

Nicotine solution is good and can be bought in any drug store. This is also good for insects on plants and flowers. Nicotine solution is made from nicotine which is a poison contained in tobacco.

LICE.

Kerosene will kill the pests. Rub it over the parts thoroughly. Equal parts of kerosene and lard is also good.

CRABS OR BODY LICE.

These are lice on the hair of the private parts. Use either mercurial or blue ointment. It must be rubbed in thoroughly.

DISEASES OF THE EYE, EAR, NOSE, THROAT AND MOUTH.

(In the preparation of this department many specialists have been freely read and consulted.)

DISEASES OF THE EYE.

INFLAMMATION OF THE EYELIDS.

Conjunctivitis.

Description and Symptoms.—Conjunctivitis is inflammation of the conjunctiva, or under covering of the eyelid. In the simple catarrhal kind there is a watery discharge and in the purulent kind there is a pus discharge. Granular conjunctivitis, or granular lids, will be treated separately.

Treatment.—Cleanse the eye thoroughly and drop in the solution. The following is a good one for simple conjunctivitis. Take 4 grains of boric acid, 1 to 2 grains of zinc sulphate, 1 grain of morphine sulphate, and 1 ounce of rose water; mix, and drop a few drops into the outer corner of the eyes twice a day.

Hot steeped tea leaves applied to the lids is also good, as is a tea made from white oak bark.

For purulent inflammation of the lids when there is pus, the eyes should be kept clean and the solution given above should be applied. (Also, see the solution given in the Baby Department.) This kind of inflammation is dangerous and needs good careful treatment or other structures of the eye will become diseased.

PEOPLE'S HOME REMEDIES FOR WEAK AND INFLAMED EYES.

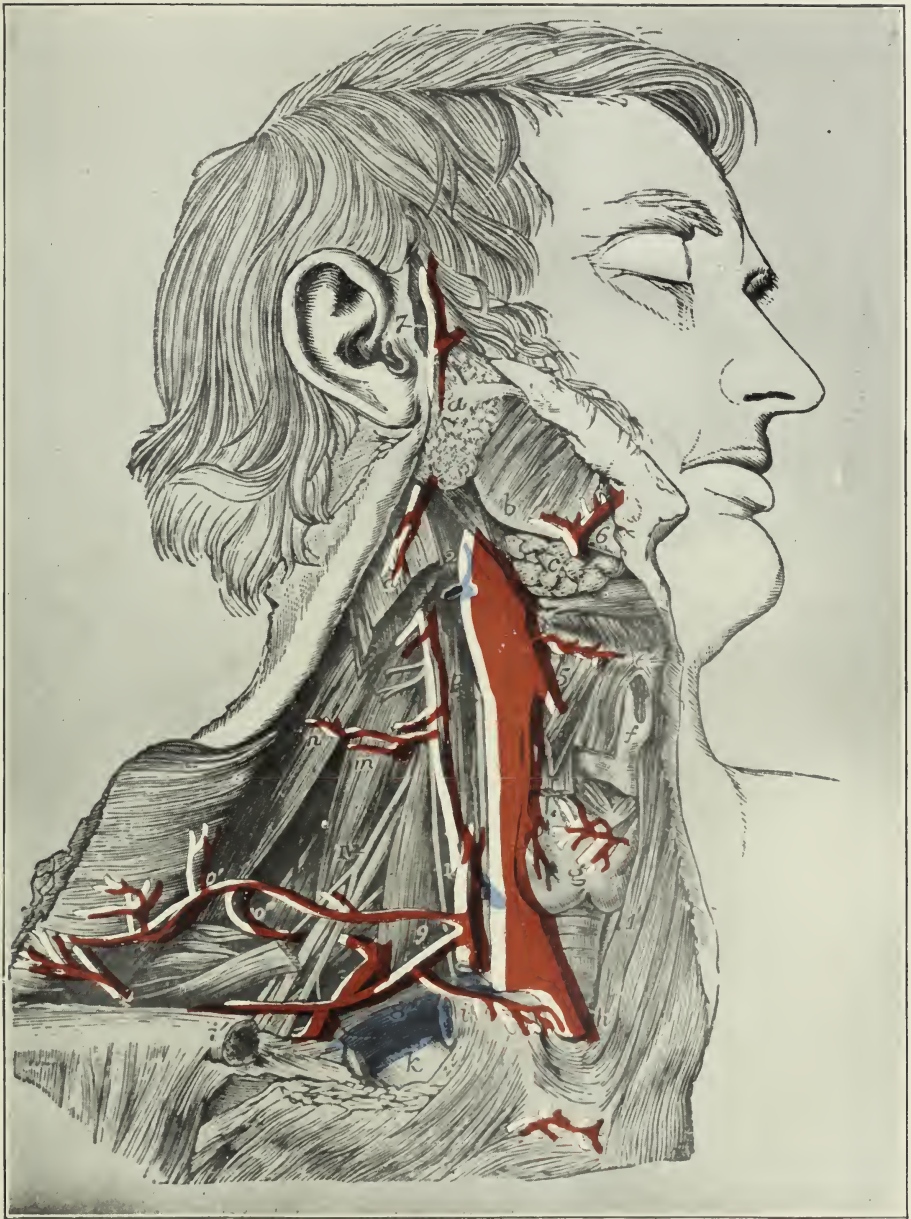
1. **Salt Water.**—One of the very best remedies for weak or sore eyes is to bathe them 3 or 4 times a day in weak salt water. This is nature's own remedy for the tears are salty as we all know. Many eye troubles would be avoided if mothers would see that the children used this simple remedy upon the first appearance of weak eyes.

2. **Chamomile Flowers and Poppy Heads.**—For inflammation of the lids, once or twice a day use warm applications of either chamomile or poppy heads.

Physician's Remarks.—These are soothing and quieting, thus doing away with the inflammation.

3. **Basswood Bark.**—Scrape very fine some of the inner bark of the root of linwood or basswood and fill a tumbler one-third full. Then fill the tumbler with rain water and the mixture will soon thicken like jelly. Place some of this mucilage between two thin pieces of cloth and bind upon the eyes.

4. **Elder Flower Tea and Laudanum.**—To a pint of soft water in an earthen dish add two ounces of elder flowers; steep, strain, and add a teaspoonful of laudanum. Bathe the eyes; or, if they are very painful, wet



HEAD AND NECK.

- a and c. Salivary Glands. (Affected when one has Mumps.)
- b. Artery running to Nose. (Pressure on this artery will stop nose bleed.)
- g. Thyroid Gland. (Affected when one has Goitre.)
- h. Windpipe or Trachea. (Divides forming Bronchial Tubes.)
- s'' Jugular Vein. (Blue above "k.")
- 8. Large Artery of Neck. (Large red blood vessel.)

cloths and bind on at night. If the blood is bad make some elder flower tea for the patient to drink.

Physician's Remarks.—These are quite soothing and healing in their action and elder flower tea is cleansing to the blood.

5. **Butter and Milk.**—For inflammation of the edges of the eyes use this treatment. Melt a little fresh butter in a teaspoonful of milk and wash the eyes when they are glued together in the morning. Afterwards apply a wet sponge to them for several minutes and the lids may be opened without pain.

6. **Bread Poultice.**—Make a poultice of bread and water with a little butter added, put into a small bag and lay over the eyes.

7. **Hops, Poppies and Stramonium Leaves.**—For inflammation of the eyeball apply a poultice of either hops, poppy leaves or stramonium leaves.

8. **Golden Seal and Witch Hazel.**—Add a dram each of powdered golden seal and witch hazel leaves to a gill of boiling water. Leave the herbs in the water for a quarter of an hour, then strain and bathe the eyes with the liquid.

9. **Scraped Potatoes.**—Make a poultice of some finely scraped raw potato and apply to the eyes every night upon going to bed. Although they are unable to fully explain it, physicians have to admit that there is much of value in the raw potato. It is also excellent for inflamed sores of long standing.

10. **Cold Water Cloths.**—Often all that will be found necessary to cure inflamed eyes is the application of cold water cloths.

11. **Belladonna.**—Keep a hot compress on the eye wet in a solution made by putting 10 drops of the third dilution of Belladonna into a teaspoonful of hot water. The compress is to be kept wet with this solution. Use no eye washes. "Used with good results by direction of Dr. J. H. Carmichael of Springfield, Mass." This is from a lady living in that city.

12. **Golden Seal.**—Make a tea with half an ounce of golden seal and half a pint of boiling water. Bathe the eyes with this each night before going to bed and you will be surprised at the results.

Physician's Remarks.—Hydrastis, or golden seal, is astringent and contracts the blood vessels, thus lessening the flow of blood to the eye and relieving the inflammation.

13. **Pith of Sassafras.**—Cut out the pith of sassafras and put into a little water, causing it to curdle. This is an excellent eye wash and especially valuable for the sticky condition caused by inflammation. This remedy comes from one of the instructors at Denison University which is located at Granville, Ohio. The remedy can be relied upon.

Physician's Remarks.—This makes a mild, oily and soothing application.

14. **Eye Wash.**—Boil three eggs in water and when at the boiling point add $\frac{1}{2}$ ounce of sulphate of zinc and allow it to settle. Use the water for inflammation of the eye of horse, cattle or man. For the human eye it should be reduced by adding ten parts of water.

15. **Poultice of Hops and Poppies.**—Mash some hops and poppy heads; boil in water and make a poultice for the eyes. The water from them may be used for an eye wash.

16. **Garden Rhubarb.**—Squeeze out the juice from the root of the common garden rhubarb. This makes an excellent wash for weak and inflamed eyes and has cured many cases.

17. **Alum and White of Egg.**—Mix some powdered alum with the white of an egg, place between two cloths and bind on the eyes. This is a very effective remedy for badly inflamed eyes. It is well to cleanse the blood at the same time by taking equal parts of salt and cream of tartar.

18. **Tea Leaves and Salt Water.**—Bind some steeped tea leaves on the eyes. Also bathe the eyes in weak salt water.

Physician's Remarks.—Tea leaves contain tannin which is astringent in its action. This causes the blood vessels to contract, less blood comes to the eyes and the inflammation is reduced.

19. **Sulphur Water.**—Put sulphur the size of the yolk of an egg in a clean cloth, tie well, put into a cup of warm water and bathe your eyes with this water, taking care that a little of it gets into the eyes.

20. **Quince Seeds.**—Make a strong decoction of quince seeds and wash the eyes twice a day.

21. **Cranesbill.**—Wash the eyes twice a day with a strong decoction of cranesbill.

22. **Golden Seal, Witch Hazel and Lobelia.**—Make a strong tea by boiling equal parts of golden seal and witch hazel bark in water and to this add an equal amount of tea made from lobelia leaves; cover, and when cold, strain and use on the eyes.

GRANULAR EYELIDS.

This is stubborn and needs application direct to the inside of the lids. Turn the inside of the lid out and apply a stick of alum to the granulated parts. A stick of nitrate of silver is also good to touch them with but is rather dangerous to use unless you are very careful.

IRITIS.

Inflammation of the Iris or Dark Part of Eye.

This may be caused by the spreading of other diseases and especially by pus inflammation of children. It may also be caused by injury to the eye. Iritis may cause loss of sight and should receive careful attention.

Symptoms.—The pain in the ball of the eye is hard to bear. The pain runs from the eye back into the head. Light hurts the eye and it feels better when the patient is in a dark room. The sight seems blurred and the eye runs water but no pus.

TREATMENT.—If you have the above symptoms you should see a doctor and in the meantime you should keep in a dark room. Do not use the affected eye at all. Bind some hot steeped tea leaves over it or apply cloths wrung out of hot tea or white oak bark tea. Any mild remedy which is moist and hot will keep down the inflammation. If you can't get a good doctor you must keep the pupil dilated, or open, so that adhesions will not form. This will also ease the pain. For this purpose apply the solution given below with an eye dropper. Open the lids and drop a few drops between them. Do this once or twice a day or once in two or three days. It should be done often enough to keep the pupils comfortably dilated. If you use too much the throat will become dry and contract. The solution is made by adding from $\frac{1}{4}$ to 4 grains of atropine to an ounce of water. The amount of the atropine to be used depends upon the severity of the attack and the age of the patient. Use salts to keep the bowels open.

Homeopathic Treatment.—At the beginning give the second dilution of

Aconite and this should be followed by the third dilution of Belladonna. (For preparation and doses see "Homeopathic Medicines" in Nursing Department.)

STYE.

Hordeolum.

This generally gets well of itself but hot moist applications help. Paint it with strong oak bark tea, strong black tea, or a weak solution of tincture of iodine and water. Be careful not to get any into the eye.

Homeopathic Treatment.—Give the third dilution of Pulsatilla internally. Put 10 or 15 drops into half a glass of water and give 1 or 2 teaspoonfuls every 2 hours for a week. This is especially good when the styne keeps returning. Keep the bowels open with salts.

PEOPLE'S HOME REMEDIES.—

1. **Tea.**—Put a teaspoonful of tea into a small bag, moisten with hot water and bind on the eye before going to bed.

2. **Ice—Bread and Milk Poultice.**—Ice will check it if applied upon first appearance. Apply bread and milk poultice to bring it to a head.

3. **White of Egg.**—Wet the edges of the lid with the white of an egg.

4. **Lean Beef.**—Bind on a piece of lean beef.

5. **Salty Grease.**—When soreness is first felt, touch the surface with a little salty grease. (Settlings of meat fryings is best.) Two or three applications are necessary. It will smart a little but will not injure the eye.

FILM ON SIGHT.

Pterygium.

Rub over it a stick of smooth alum or blue stick. Be careful not to touch any part of the eye. If it grows over the pupil it must be taken off. This is very easily done by an eye surgeon. It needs only the use of cocaine to deaden the sensibility. Alum or blue stick will often stop their growing. Of course the rubbing must be carefully done. Keep the eyelids open a few minutes after the application so as not to get any upon other parts of the eye. Nitrate of silver stick is quite good but it is severe and needs an expert to apply.

CATARACT.

This occurs when the lens of the eye becomes opaque. Foreign material grows in it so that the light cannot get through.

Treatment.—The only thing to do is to let it get "ripe" and then have it taken out. The operation is very successful. Glasses are needed afterwards and the patient is a new person. The operation is usually performed in a very few minutes. Cocaine is usually dropped into the eye and this makes the operation almost free from pain. When the cataract is the result of injury to the eye the outlook is not so good.

THINGS IN THE EYE.

(See "Accidents and Emergencies.")

CROSS EYES.

These should always be attended to when the child is young. Go to a competent eye specialist. No parent has a right to let a child grow up with cross eyes.

EYE STRAIN AND GLASSES.

Whenever any one complains of pain in the eyes and head, or back of the eyes, or squints after reading, or complains of the eyes hurting or tiring easily after reading; or, if the eyes are continually watering; then the chances are that that person needs glasses. If glasses are not properly fitted they will injure. If they fit well they will do a world of good.

The health of children is often injured because they have no glasses or because their glasses do not fit properly. They become nervous and irritable and are often troubled with neuralgia or headaches. The fitting of glasses is an art in itself and you should go to none but a competent man. Never read when there is a poor light or when the light keeps flickering. Too bright a light is also injurious and especially a light that shines directly into the eyes from in front. Let the light shine over the shoulder; or, if you sit facing it be sure to have a green shade over it. Do not sit stooped over when reading or studying or the eyes will become filled with blood and congested. People seldom appreciate good sight until they begin to have trouble with their eyes.

DISEASES OF THE EAR.

· EARACHE.

Children are afflicted with this painful disease oftener than adults. It frequently occurs with infectious diseases like scarlet fever and grip.

Causes.—Besides coming with infectious diseases it frequently comes from a cold and the ear becomes terribly inflamed and painful. Some people are very much subject to ear troubles.

Treatment.—Simple earache in adults can generally be relieved by hot applications. Hot salt bags are good and so are flaxseed, hop, or bread and milk poultices. A little laudanum may be added to a bread and milk poultice with good results. Hot water dropped into the ear, or a few drops of laudanum, often gives relief. Mullein oil is also very good. Or, you can roast an onion in the coals, take out the heart and insert in the ear and bind the rest of the onion on the outside.

PEOPLE'S HOME REMEDIES.—

1. **Onions and Tobacco.**—Chop up onions and strong tobacco, using half as much tobacco as onions; wrap in a wet cloth and roast in the ashes. Squeeze out the juice and put 3 or 4 drops into the ear and it will give almost instant relief.

Physician's Remarks.—Onions alone are good and tobacco is quieting to the nerves so these two will be found a good combination.

2. **Bitter Herbs and Hop Poultice.**—Steam the ear and side of the head over bitter herbs or apply a hop poultice.

Physician's Remarks.—Hops are quieting and the heat and moisture are soothing and relieve the congestion.

3. **Garlic, Honey, Sweet Oil and Laudanum.**—Roast two garlies, mash them while hot and add half a tablespoonful each of honey, sweet oil, and laudanum. Squeeze out the juice and occasionally drop a little into the ear. This will be found to be a valuable remedy.

4. **Sweet Oil, Glycerine and Laudanum.**—Wrap a hot brick or stone

with a damp cloth and place it to the ear, thus steaming it freely. To a teaspoonful each of sweet oil and glycerine add 10 drops of laudanum; warm the mixture, and put three or four drops into the ear.

5. **Warm Water.**—Pour a teaspoonful of warm water into the ear and soon afterward let it run out.

6. **Laudanum and Sweet Oil.**—Use equal parts of laudanum and sweet oil; have it slightly warm and put two drops into the ear.

7. **Laudanum, Glycerine and Olive Oil.**—Mix equal parts of laudanum, glycerine and olive oil; warm, put two or three drops into the ear and fill with cotton.

8. **Garlic and Salad Oil.**—Steep a small piece of garlic in some salad oil, roll up in a thin cloth and insert in the ear. When taken out, fill the ear with cotton so it will not get cold.

9. **Onion Poultice.**—Place an onion in the fire completely buried in hot ashes. When it can be pierced with a fork, remove the peel and open and remove the heart and place it in the ear as hot as can be borne. Spread the rest of the onion on a cloth and bind on the outside of the ear. A mother writes, "I have used this many times and it never fails to bring relief to the little one suffering with earache."

Physician's Remarks.—The moisture and heat are soothing and this makes a good poultice to relieve the congestion. You will notice I have recommended this above as one of my own treatments.

10. **Mullein Oil.**—Two or three drops of mullein oil will be found effective.

11. **Laudanum, Sweet Oil, Honey and Cayenne.**—To equal parts of laudanum, sweet oil and honey add a little tincture of cayenne; mix, and from a warm teaspoon drop into the ear 5 or 6 drops of the mixture and stop the ear tight with cotton. Repeat every hour or two. If the pain is very great, steam the ear and side of the head over bitter herbs and apply a hot fomentation of hops or a poultice made of roasted onions. Bathe the feet in hot water and take an active cathartic.

12. **Paregoric.**—Soak a cracker in warm water, pour on a little paregoric and apply as hot as can be borne.

13. **Peach Seeds, Glycerine and Sweet Oil.**—Take the kernels from 9 peach seeds, pound them up fine, put into a small vessel and add one tablespoonful of glycerine or sweet oil and cook until the kernels are of a dark brown color; then strain and it is ready for use. The dose is one or two drops in the ear. Repeat every hour, if necessary, until relieved. The person sending this recipe adds: "This is a sure and tried remedy as we have used it in our family for sixteen years and have never had to use it over three times in any case. When you haven't the sweet oil or the glycerine as called for you can use castor oil."

14. **Hot Applications.**—The application of warmth by the means of dry heat or poultices or fomentations will generally tend to relieve the severity of the pain.

Physician's Remarks.—Heat and moisture do this by relieving the congestion and inflammation.

15. **Black Pepper and Sweet Oil.**—Put a little black pepper into a small piece of cotton, add a drop of sweet oil, roll up tight so that the pepper cannot get out and insert this in the ear.

16. **Steaming Ear.**—Put the patient's feet in water as hot as can be

borne and keep them there for 15 minutes. Put a drop of slightly warmed sweet oil into the ear and put the patient to bed. Take a hot flatiron, wrap a wet cloth around it and then a dry one and place it to the ear. This treatment will bring relief almost instantly.

17. **Olive Oil, Peppermint, Pennyroyal, Etc.**—Take equal parts of olive oil, peppermint oil, pennyroyal, wintergreen oil, rosemary oil and laudanum and apply sparingly.

INFLAMMATION OF THE EAR.

(Also Mastoid Disease.)

Symptoms.—There is fever, pain, sweating and swelling in front and behind the ears. When pus forms, and especially in the mastoid cells, there is very great danger and there may be unconsciousness. In some cases the symptoms are masked and this makes all the more care necessary. By examining the drum you will see it bulging if the middle ear is diseased. If this is the case the drum must be punctured to let out the pus. This will relieve the patient wonderfully.

TREATMENT.—Inflammation of the ear from any cause needs careful watching and treatment for fear that mastoid disease will develop. If bad symptoms come on you must have the mastoid opened and it should be done early. If, from the beginning, there are symptoms of the blood being poisoned, patient is dull, stupid, and but partially conscious, then you should have a surgeon see the case at once. The mastoid cells are very near the brain and trouble in this region is dangerous. Ex-Senator Conklin, of New York, died of mastoid disease.

Apply hot applications and poultices but no laudanum as you do not want to cover up the pain and bad symptoms. A patient with inflammation of the ear must be very carefully watched. The homeopathic treatment is excellent. Use hot applications and also the homeopathic treatment.

Homeopathic Treatment.—Use the second dilution of Aconite every half hour at the beginning. After 24 hours use the third dilution of Belladonna in the same way. Use the third trituration of Hepar Sulph. in alternation with the Belladonna. If you fear pus, use the third trituration of Mercurius Sol. in place of the Hepar Sulph. These having done splendid work for me. (For preparation and doses see "Homeopathic Medicines" in the Nursing Department.)

CHRONIC DISCHARGE FROM THE EAR.

This should have attention. Remember that the ear that constantly discharges is a danger to any one for the trouble will go back to the mastoid cells.

Frequently, using warm water with a syringe will do good. If the discharge has a bad odor, use a few drops of carbolic acid in a teacupful of water and syringe the ears twice a day. After syringing you should dry the ear thoroughly with cotton or wear cotton in the ear. If the discharge continues it must have special attention or the person will become deaf. The drum may be eaten so that it will not heal. The patient who has continual discharges from the ears is frequently run down in health. Give tonics and in pleasant weather keep the patient out doors in the air and sunshine.

Homeopathic Treatment.—Four times a day, take a tablet of the third trituration of Mercurius.

DEAFNESS.

Deafness and hardness of hearing frequently come from the catarrhal condition produced by growths in the nose and throat. Have these growths removed and you will be a new person. Also have the ears syringed to remove the wax.

PEOPLE'S HOME REMEDIES.—

1. **Olive Oil, Etc.**—Where there is wax to be removed, put a few drops of the following mixture into the ear once or twice a day. Mix $\frac{1}{2}$ ounce of olive oil, $1\frac{1}{2}$ drams of glycerine and 15 drops of sassafras. If the ear is too dry use the following: oil of turpentine, $\frac{1}{2}$ dram; glycerine, 1 dram and linseed oil, $\frac{1}{2}$ ounce. Or, if you have the ear syringed the wax will come out.

2. **Bay Salt.**—Put a large tablespoonful of bay salt into half a pint of cold spring water. Let it stand 24 hours, occasionally shaking the bottle. Each night after going to bed pour a small teaspoonful into the ear and repeat for 6 or 8 nights.

3. **Sweet Clover and Hen's Oil.**—Put a handful of the sweet clover which is raised in gardens into a gill of hen's oil and stew until the strength is out of the clover, then strain and bottle. Syringe the ears twice a day with soap suds and then put in 3 or 4 drops of the oil.

4. **Syringing.**—Deafness is frequently caused by hardened ear wax. Have the ears syringed out.

5. **Goose Grease.**—Put one or two drops of goose grease into the ear twice a day.

6. **Mullein Oil.**—Put a drop or two of mullein oil into the ear. This is also good for earache.

THINGS IN THE EAR.

(See "Accidents and Emergencies.")

DISEASES OF THE NOSE.

Nasal catarrh and hay fever both affect the lining membrane of the nose passages. These will be found thoroughly treated under "Diseases of Respiration."

NOSE BLEED.

(See "Accidents and Emergencies.")

THINGS IN THE NOSE.

(See "Accidents and Emergencies.")

GROWTHS IN THE NOSE.

(Polypi, etc.)

Many people have growths in the nose which should be removed. Of course cancers may come in the nose the same as anywhere else in the body and the only treatment is removal but the growths we refer particularly to are far more common than cancers. A polypus is a fleshy growth in the nose. The septum, or division between the nasal passages, is often diseased and enlarged as are the turbinated and other bones of the nose. The nasal passages become partially, or almost completely, closed by these growths and it becomes difficult for the patient to breathe through the nose so he goes around

with his mouth open and breathing through it and is thus more subject to disease than one who breathes through the nose. These growths cause catarrh which in turn causes headaches, sore throat, and hardness of hearing. Many children grow dull and stupid because of these growths. Have them removed and see what a change it will make in the patient.

DISEASES OF THE THROAT.

TONSILITIS, (Including Quinsy.)

Description.—Acute tonsillitis is an inflammation of the tonsils. It is accompanied with great swelling of their tissues and associated with pharyngitis. There is the follicular and the diffuse form of tonsillitis. The follicular form is distinctly infectious, that is, you can take it from another. This kind is rare in young children but more common between the ages of 5 and 20 years. Some suffer from frequent attacks until they are 25 or 30 years old. The follicular kind is not common in adults but the diffuse, or suppurating, form (quinsy) is frequently met with in adults. People who breathe through the mouth are very much subject to it and one attack makes a person more liable to another.

SYMPTOMS.—The throat is sore with a sense of swelling or tightening. The patient has a chilly feeling and frequently has aching and pain in the limbs. There is a violent headache and the fever rises to between 103 and 105 in a few hours. The patient rarely vomits or is sick at the stomach. (See "Scarlet Fever.") On examining the throat the tonsils are found to be swollen and the swelling frequently extends as far across the fauces as the uvula, or part of the soft palate which hangs down in the throat. Frequently the tonsils are so swollen as to press against each other. They look very red and are covered with a whitish-yellow or grayish covering and they are often very foul looking. In diphtheria, if this membrane or covering is removed, a raw or bleeding surface is left but in tonsillitis the surface is left smooth and glistening. (See the table showing the comparison of diseases.)

In tonsillitis the breath is very foul and the odor may fill the room. The swelling of the glands of the neck and the stiffness of the muscles make examination of the throat very painful.

Symptoms of Quinsy.—In quinsy, or the suppurating form of tonsillitis, the general indications are often less severe but the local pain is often very severe. Opening the mouth may be very painful and is sometimes impossible. The tonsil is sometimes enormously enlarged but is rarely dotted with spots. It may be smooth and glistening instead. The swelling often extends to the uvula which may be so swollen and lengthened as to cause great distress.

TREATMENT.—

The treatment is largely the same for both kinds of tonsillitis.

Preventive Treatment.—Keep from taking cold and if necessary have the tonsils or adenoids removed.

Emergency Remedy or "What to Do."—Gargle the throat frequently with hot water or steam the patient's throat as described later. Sweat the patient and give him a cathartic. Salts are the best cathartic in this disease. Follow instructions given for nursing.

Caution or "What Not to Do."—Do not take cold. In gargling the throat do not swallow the liquid or much of the mucus or secretion will also be swallowed. Do not eat solid foods.

Allopathic Treatment.—In the early stages give 1/500 of a grain of biniodide of mercury every half hour until 10 doses have been taken. After the first stage, for an adult, give from 10 to 20 drops of tincture of iron chloride every three to four hours. This should be well diluted with water and should be taken through a tube so as not to injure the teeth. Also take with it 10 grains of citrate of potash. Another good remedy to take from the beginning is Parke-Davis & Co.'s tonsilitis tablet, triturate No. 645. Give one tablet every ½ to 3 hours according to age. This is an excellent remedy. Chloral hydrate is good for this disease. Put 1½ drams into 1 oz. of water and apply frequently with a camel's-hair brush. Do not swallow this medicine or it will make you sleepy.

Homeopathic Treatment.—I have found the homeopathic treatment very effective in the treatment of tonsilitis.

For the first 24 hours give the second dilution of Aconite. Put 10 or 15 drops into half a glass of water and take 2 teaspoonfuls every ½ to 3 hours. About the second or third day when the patient is sweating give the third dilution of Belladonna in the same dose and prepared in the same way as the Aconite. When the fever has gone down somewhat and the tonsil is large and red you may alternate the third trituration of Hepar Sulphur with the Belladonna. If the tonsils seem soft, the jaw stiff, and the patient is hardly able to open the mouth, use the third trituration of Mercurius Sol. alternately with the Belladonna instead of the Hepar Sulph. If there is much saliva and the above symptoms use the Mercurius Sol. alone.

Nursing and Diet.—A very good thing to do in tonsilitis from the beginning is to gargle frequently with water as hot as it can be borne. This not only reduces the swelling but it is thought it aids somewhat in getting rid of the germs. Do not swallow anything you are gargling the throat with as it contains mucus and germs. After gargling thoroughly with the hot water you can use Dobell's solution with much benefit. This may be used as a spray for the throat and nose or it may be diluted three times with water and used as a gargle. Here is the formula for this solution. To a pint of water add 1 dram of borax, 2 drams of common baking soda and 24 grains of carbolic acid.

As an aid in the treatment of tonsilitis and sore throat with much swelling, and especially when it seems as though the tonsil were going to break, it is well to steam the patient's throat in the following manner. It will be better than poultices and less bother. Attach a piece of hose to the spout of a tea-kettle of boiling water. If you have no hose, take a tube or roll of paper, put one end over the spout and the other end of the tube or hose in the mouth of the patient and have him inhale the steam. Make the tube as short as possible so that the steam will be as hot as the patient can bear it. The hot steam enters the mouth and relieves the painful and swollen parts. You will be surprised to learn how hot the patient can take the steam. I once saved a man's life with this treatment. He could neither swallow nor talk when I first saw him and was in a critical condition. I advised this treatment but was very anxious and worried about him so returned in an hour to find him sitting with the spout itself in his mouth and not using the hose or tube as I had directed. I was alarmed lest he should scald himself but he only smiled with joy for he was greatly relieved and was already able to both

swallow and talk. So steam the throat and keep it up for several hours should it be necessary.

Give hot drinks like lemonade and teas, to produce sweating. Eat no solid foods but liquids only. Keep the bowels open. Externally, apply an ice bag and keep it on all the time for several days. You can also apply a piece of well salted pork externally to the tonsils. Bind it on with a cloth which is tied under the jaw and over the head. It needs to draw well. Dip your moistened finger into baking soda and apply to the tonsils every hour. Or, you can apply pure guaiacol to the tonsils. It is painful for a little while but will do much good.

The tonsils will feel soft if there is much pus in them. Should pus form the tonsils should be opened and it will save much pain. If you are troubled much with the tonsils they should be removed.

After Effects.—It is now a pretty well settled fact with physicians that rheumatism enters the system through the tonsils or is caused by diseased tonsils. It is best to have them removed if they give you trouble.

PEOPLE'S HOME REMEDIES.—For Tonsillitis and Quinsy.

1. **Steaming Throat.**—Into a kettle containing 2 quarts of boiling water put either 5 drops of carbolic acid or $\frac{3}{4}$ of a teaspoonful of turpentine and steam the patient's throat.

Remarks.—Directions for steaming the throat have been given above so will not be repeated here. Either listerine or glyco-thymoline are also good to add to the water.

2. **Flaxseed and Hop Poultices.**—Put hot flaxseed or hop poultices to the throat; change every few minutes and relief will soon follow.

3. **Honey, Vinegar and Sage Tea.**—Take 1 tablespoonful of honey, 2 tablespoonfuls of vinegar and enough sage tea to make half a pint. Use as a gargle.

4. **Alum Water.**—Gargle with weak alum water.

5. **Iodine.**—Touching the tonsils with tincture of iodine has often cured quinsy.

6. **Steaming with Bitter Herbs.**—Take a handful each of sage, hops, boneset, horehound and catnip, or any three of them if they are not all at hand. Place these herbs in a teakettle and steam the patient's throat. Also bathe the throat with the tea made from these herbs.

7. **Sumach, Sage, Borax, Alum, Saltpeter and Honey.**—Take a small handful of sumach berries or bark and the same quantity of sage; put into three pints of water and boil down to a pint; add a teaspoonful each of pulverized borax, alum and saltpeter and sweeten with honey. This is an excellent remedy when used frequently as a gargle.

8. **Honey and Lemon Juice.**—In the place of a gargle you can give freely of honey and lemon juice mixed together.

9. **Poke Root Poultice.**—Roast some freshly dug poke root in the ashes until soft, then wash and apply warm as a poultice.

Physicians Remarks.—This is a good treatment. I believe that poke weed is called "garget" in some sections of the country and "pigeon berry" in other sections. It is said that the pigeons eat these berries to reduce their flesh before they start on their trip south in the fall. It is because of this power of reducing flesh that this plant is used in so many different anti-fat remedies. I don't know how the plant got the name of "garget" unless it is because it is given to cows to cure garget. A poultice of this root is also

excellent when applied to caked udders in cows or to caked breasts in women. Some call it "ink berry." Don't you remember how you made ink of the berries when you were a child?

10. **Baking Soda.**—When the first symptoms of tonsilitis appear, frequently touch the tonsils with a little baking soda and you will stop the progress of the disease.

11. **Homeopathic Remedy, Etc.**—Procure some tablets of the third trituration of Mercurius Biniodide at a homeopathic pharmacy and give 2 tablets every hour until relieved. Also gargle the throat with a solution of water and peroxide of hydrogen and bind a steaming poultice of flaxseed meal on the throat in such a way as to cover the ears as the passage from the ear to the throat will be affected. This is a proved remedy.

12. **Vinegar, Salt and Cayenne.**—To a pint of water and vinegar add a tablespoonful of salt and a teaspoonful of cayenne and simmer together. Cool, strain, and use as a gargle.

13. **Blackberry Root, Elm Bark, Sumach, White Oak and Alum.**—Take 1½ ounces each of blackberry root and red elm bark and 1 ounce each of sumach berries and white oak bark. Use enough water to make a tea; strain, and when cool add a piece of alum as big as a walnut for each pint of the decoction and use as a gargle.

14. **Vinegar and Red Pepper.**—Gargle the throat with a mixture of vinegar, red pepper and water.

PEOPLE'S HOME REMEDIES FOR SWELLING OR ELONGATION OF THE PALATE.

1. **Alum and White Oak Bark.**—Dissolve a little alum in a decoction of white oak bark and gargle the throat.

2. **Salt, Pepper and Mustard.**—Salt, pepper, or mustard are good when mixed with water and used as a gargle.

ENLARGED TONSILS AND ADENOIDS.

The tonsils should be removed when they are continually enlarged and when the patient is subject to repeated attacks of tonsilitis. They should be removed when they are so large as to interfere with speaking and when they continually contain pus. They are then a danger to the system and render a person more subject to disease. It is thought that diseased tonsils have much to do with attacks of rheumatism.

This advice as to removal also applies to adenoids and tumors. Adenoids are enlarged glands in the throat. These enlargements, through the catarrhal condition they cause, affect the hearing and the sense of smell and they also affect a person's speech and obstruct the breathing. If you see a child that always keeps its mouth open so as to breathe more easily, you may be pretty certain that there is some obstruction to breathing either in the throat or in the nostrils. These enlargements not only make a child appear dull but they really cause dullness. Many a child that is punished for being dull and stupid would not be so if his adenoids or diseased tonsils were removed. These tumors must be removed and then the child will breathe the air through the nostrils as nature intended and it will be far healthier. The removal of these growths will also do much toward curing the catarrh. I am not in favor of indiscriminate operations but I unhesitatingly advise the removal of adenoids, diseased tonsils and foreign growths in the nose.

THINGS IN THE THROAT—CHOKING.

(See "Accidents and Emergencies.")

SORE THROAT.**Pharyngitis.**

Pharyngitis is inflammation of the pharynx or back part of the throat.

Causes.—The causes of sore throat are colds and infectious dust.

Symptoms.—The mucous membrane is swollen and sore and there is some pain in swallowing. Sometimes it feels as though there were a tightening in the throat. At first the throat looks red and angry and the tongue is coated.

TREATMENT.—

Preventive Treatment.—Avoid taking cold. Do not get wet feet and then go around all day without drying them and putting on dry clothing.

"What to Do."—Give a cathartic and use one of the good gargles given. Gargling with hot water or tea is good. Sweat the patient if necessary. Follow instructions as to nursing.

Caution, or "What Not to Do."—When you are warm do not sit down to cool off. Do not take more cold. Do not allow the bowels to become constipated. Do not neglect a cold or sore throat or something more serious may develop.

Allopathic Treatment.—If the patient is an adult you can give from $\frac{1}{5}$ of a drop to 3 drops of tincture of aconite with 1 teaspoonful of sweet spirits of nitre in a glassful of hot lemonade every 1 to 3 hours. Watch carefully for dryness in the throat and stop the use of these medicines when that symptom appears.

To one ounce of liquid albolene add 3 drops each of oil of sassafras and oil of sandal wood and use as a spray for the throat.

Homeopathic Treatment.—For the first 24 hours give the second dilution of Aconite. Put 10 or 15 drops into half a glass of water and give 2 teaspoonfuls every $\frac{1}{2}$ to 3 hours. Follow the aconite with the third trituration of Mercurius Biniodide. Give one tablet every $\frac{1}{2}$ to 3 hours.

Nursing.—Apply a cold compress to the neck below the angle of the jaw. This is done by dipping cloths into cold water or ice water, wringing them out and binding against the part. They should not be allowed to become warm or they will produce the relaxing effect of a poultice. It is well to put the patient to bed. Give a cathartic to move the bowels.

An adult should gargle with water as hot as can be borne. To the water used you can add an equal quantity of distilled extract of witch hazel; or, you can add a pinch of red pepper and some cider vinegar. A good gargle is made by adding a little pepper and salt to some tea made from white oak bark. Gargling with vinegar is good. Another good gargle is made by adding pepper and honey to some sage tea. Blowing sulphur through a goose quill upon the sore parts of the throat is often effective; or, you can make a salve of 1 part of sulphur and 2 parts of cream and apply that to the throat.

Hot teas and hot lemonade are good and if necessary you can give the patient a sweat. The "Corn Sweat" described in the Nursing Department is very effective. The teas may be made of boneset, white root, sage or horehound. They produce sweating and relieve the congestion and inflammation. Teas made of cranesbill, witch hazel or golden seal make good gargles. A hot foot bath will help.

PEOPLE'S HOME REMEDIES.—

1. **Vinegar, Pepper and Honey.**—Simmer together some vinegar, red pepper, and honey or sugar, and add enough water so that it will not be too strong. Use this as a gargle.

2. **Camphor Gum.**—Hold a piece of camphor gum the size of a pea in the mouth until it is dissolved. This is fine for sore throat.

3. **Baking Soda.**—Add a teaspoonful of baking soda to half a glass of water and gargle the throat frequently.

Physician's Remarks.—This is especially good for tonsilitis.

4. **Hot Water Applications.**—Cloths wrung out of hot water and applied to the throat promptly and thoroughly will cure almost any case of sore throat.

5. **Sage Tea, Alum and Honey.**—Gargle the throat with sage tea in which there has been dissolved a little alum and honey.

6. **German Remedy for Sore Throat.**—To half a pint of strong sage tea add two tablespoonfuls each of vinegar, strained honey and table salt. Mix, strain, and gargle frequently.

Physician's Remark.—This German remedy makes an excellent gargle for sore throat.

7. **For Putrid Sore Throat.**—To half a pint each of water and cider vinegar add 2 tablespoonfuls each of red pepper and table salt. Let this boil for a minute or two and then bottle for use. Gargle until the mucus clears from the throat. Persons who cannot gargle may swallow a little of the mixture. This is excellent for any form of sore throat.

8. **Kerosene, Salt and Alum.**—Place a piece of brown paper saturated with kerosene oil around the neck and gargle with a solution made of equal parts of salt and alum.

9. **Lard and Ammonia.**—Heat two parts of lard and 1 part of aqua ammonia; spread on cotton batting and apply to the throat. A lady writes, "I have used this myself for an attack of laryngitis and have often used it for croup. It does its good work by drawing out the inflammation."

10. **Camphor, Salt and Borax.**—Mix a little camphor, salt and borax in a glass of water and use as a gargle.

11. **Cold Water Applications.**—Wring a cloth out of cold water and bind on the throat at night. This should be covered with a dry towel.

12. **Witch Hazel.**—Gargle with witch hazel. Also saturate a flannel with the same and wear about the neck.

13. **Salt Water and Red Pepper.**—Dissolve a large tablespoonful of salt in half a glass of water and gargle the throat before each meal. A little red pepper may be added to this if desired.

14. **Bread and Cayenne Pepper.**—Soak a small piece of bread in some water and mix a pinch of cayenne pepper with it. This should be rolled into a small pill and swallowed.

15. **Cayenne Pepper, Black Pepper, Salt and Vinegar.**—Add a pinch of cayenne pepper, $\frac{1}{4}$ teaspoonful of black pepper and two teaspoonfuls of salt to one glass of vinegar and use as a gargle.

16. **Salt and Vinegar.**—Gargle with salt and vinegar.

17. **Spirits of Camphor.**—One lady says, "A few drops of spirits of camphor every hour will relieve a sore throat sooner than any remedy I know of. This is an old and well tried remedy for sore throat. To inhale the camphor is excellent for cold in the head."

Physician's Remarks.—I know this to be a very good treatment.

18. **Liniment.**—Apply flannel cloths wet with some good liniment.

19. **Salt Water, Sugar and Soda.**—To some weak salt water add a little sugar and soda. Gargle as soon as you awake in the morning and after that swallow a little clear salt water before eating. This is good for any sore throat.

20. **Tea Leaves.**—If you have sore throat try chewing some tea leaves.

21. **Alum, Honey, Sage, Etc.**—One lady writes, "Make some strong tea and use it as a drink and as a gargle. Salt and water is used by many as a gargle but I find that a little alum and honey dissolved in sage tea is better."

22. **Baking Soda.**—Wash or gargle the throat with water in which baking soda has been dissolved.

23. **Sage, Golden Seal, Cankerweed, Alum, Etc.**—Take a small handful each of sage, golden seal and cankerweed; steep these herbs together in a little water; strain into a dish and add 1 teaspoonful of granulated sugar and $\frac{1}{4}$ teaspoonful of pulverized alum; stir until dissolved, then gargle the throat every little while. A lady living at Middlefield, Ohio, says she has used this frequently and always with good results.

24. **Alum, Sage Tea, Borax, Etc.**—Add some alum to some sage tea. You can also add honey and borax if you wish. This makes a good gargle for sore throat.

25. **Alum, Sugar, Sage, Vinegar, Etc.**—A lady living at Wellesley, Mass. writes the following: "Take a small piece of alum, a teaspoonful of sugar, a few sage leaves and $\frac{1}{4}$ cup of vinegar; steep, and when cold gargle every two hours. This recipe was given to my mother by a famous physician and we have used it for years with excellent results. It is grand for either sore throat or quinsy."

26. **Steaming with Listerine, Turpentine, Etc.**—Gargle frequently with very hot water or steam the patient's throat with the steam from a teakettle. Either herbs, such as golden seal, horehound, etc., or listerine or turpentine may be added to the kettle of water if you have any of them handy.

CHRONIC SORE THROAT.

Chronic Pharyngitis.

Symptoms.—The mucous membrane is irritated and the secretions are much thickened so that the patient must continually attempt to clear the throat which feels dry and harsh. The cough is spasmodic and made worse by exposure to cold and dust.

Treatment.—Gargle at night with either clear hot water or hot salt water. Several times a day take 10 grains of benzoate of ammonia internally.

DISEASES OF THE MOUTH.

SORE MOUTH—CANKERS AND ULCERS.

Stomatitis.

Stomatitis is an inflammation of the mouth. We will treat of the Catarrhal, Aphthous and Ulcerative forms.

Symptoms of Catarrhal Form.—There is an intense redness of the mucous membrane lining the mouth and there is some swelling which is particularly

noticed on the gums. There is increased heat in the mouth and the child suffers pain. The saliva flows freely and constantly dribbles on the chin. There is some diarrhea or stomach and bowel trouble.

Symptoms of Aphthous Form.—This is the catarrhal form more fully developed. There are cankers which are very sensitive. Every mother knows what cankers are and this form will not need further description.

Symptoms of Ulcerative Form.—The ulcerative or putrid kind is more serious. The ulcers may be large and cause great pain and suffering. They are mostly situated along the edges of the gums which recede from the teeth; or, they may be on the margins of the tongue and even on the lips. The breath is very foul and the mouth is made sore by the flow of saliva.

TREATMENT.—

More has been said concerning this disease in the Baby Department.

Cleanse the mouth and regulate the bowels and the diet. The following is a good mouth wash. Mix 30 grains of chlorate of potash, 10 drops of tincture of myrrh and 3 fluid ounces of elixir-calisaya and use freely in the mouth.

In the ulcerative form touch the ulcers with a piece of alum or a stick of nitrate of silver.

The diet should be of nutritious food, such as cold consommé and cold chicken jelly and ordinary foods if they can be taken.

In scurvy cases give fresh vegetables, fruits, and beef juice. These are absolutely needful.

A strong decoction of cranesbill is very good for sore mouth; or, you can take 1 part of cranesbill and 2 parts of golden seal and make a strong decoction and apply to the sore mouth.

Another good remedy is to take equal parts of the decoctions of strong green tea, golden seal and sage. Use this as a gargle for sore mouth and throat.

PEOPLE'S HOME REMEDIES.—For Sore Mouth, Cankers and Ulcers.

1. **Borax Water.**—Wash the mouth with a solution of 15 grains of borax to 1 ounce of water.

Physician's Remarks.—Borax is antiseptic and somewhat astringent.

2. **White Oak Bark and Alum.**—Boil 1 ounce of white oak bark in a pint of water; strain, and add 1 scruple of alum. Apply several times a day with a soft sponge.

3. **Cranesbill, Golden Seal and Alum.**—Frequently wash the mouth with a tea made of equal parts of cranesbill, golden seal and alum.

Physician's Remarks.—Cranesbill is mild, unirritating and astringent. Alum is also astringent and golden seal has a special action on the mucous surfaces of the mouth, throat and stomach. Hydrastine and berberin are two of the alkaloids contained in golden seal.

4. **Burnt Alum.**—Touch the canker with a little burnt alum.

5. **Alum Water.**—A splendid wash for sore mouth is a teaspoonful of alum dissolved in a glass of water.

6. **Yellow Dock, Alum and Honey.**—Make a tea of yellow dock root and add equal parts of honey and alum. Or, let the child chew the root of the yellow dock.

Physician's Remarks.—The honey and alum act locally on the parts and yellow dock is an alterative.

7. **Chlorate of Potash.**—Use chlorate of potash as a wash for sore mouth.

8. **Molasses.**—Wet a piece of soft cotton with New Orleans molasses and gently wipe the sore spots with it. A mother living at Saginaw, Michigan says, "I have found this to be excellent for sore mouth. It will heal it very quickly."

9. **Sage Tea, Honey and Borax.**—Sage tea, honey and borax makes a fine wash for sore mouth and is also a good gargle for sore throat.

10. **Tomato Juice.**—Wash the sore mouth with the juice of ripe tomatoes. **Physician's Remarks.**—This is a good remedy. The tomato juice is slightly acid.

11. **Golden Seal.**—Wash the mouth with a tea made of golden seal.

12. **Nitrate of Silver.**—Touch the canker with a stick of nitrate of silver.

13. **Tincture of Myrrh.**—Wash the sore mouth with the tincture of myrrh.

Physician's Remarks.—This is a stimulant and is slightly astringent. By adding a few drops of carbolic acid and some thymol the curative action of the myrrh will be increased.

14. **Blue Cohosh, Golden Seal, Etc.**—Blue cohosh root combined with an equal part of golden seal and made into a tea by using 1 ounce each of the herbs to a pint of boiling water, steeping, and sweetening with honey is excellent for ulcerous sore mouth and throat when applied locally.

15. **Cranesbill, Golden Seal, Sage and Honey.**—Make a tea or decoction of cranesbill and use as a gargle or apply locally. It may be used alone or in combination with golden seal, sage and honey. It is also good as a gargle for salivation caused by mercury.

16. **Witch Hazel.**—As a gargle for sore mouth use a decoction of witch hazel.

17. **Golden Sea, Cranesbill, Blue Cohosh, Etc.**—A tea or decoction of golden seal is good alone or in combination with cranesbill, witch hazel or blue cohosh.

18. **Cranesbill, Witch Hazel, Black Cohosh, Etc.**—To a quart of boiling water add $\frac{1}{2}$ ounce each of cranesbill, witch hazel, black cohosh and golden seal. Each of the herbs should be coarsely bruised. Mix the articles together and steep with gentle heat in a closed vessel for 2 hours; remove from the fire and strain. This is good for chronic sore throat and mouth and also is good as an injection for leucorrhea.

19. **Sage, Hyssop and Borax.**—Take 1 ounce of sage leaves, 1 ounce of hyssop leaves, 1 quart of boiling water and 1 teaspoonful of powdered borax. Place the herbs in the boiling water and allow them to steep for half an hour, then strain and add the borax. **Uses.**—This is good as a wash and gargle in sore throat, cankered mouth and quinsy when accompanied with inflammation.

GANGRENOUS SORE MOUTH.

Noma—Cancrum Oris.

These terms are applied to all severe forms of ulceration. It is very serious on account of its following other debilitating diseases. It frequently follows measles and sometimes follows or comes with scarlet fever, typhoid fever and whooping cough. This must be treated by a physician.

NURSING SORE MOUTH.

This is treated in the Baby Department.

PEOPLE'S HOME REMEDIES.—

1. **Borax and Honey.**—Mix a little borax and honey and apply to the sore mouth.

2. **Alum, Salt, Yellow Dock and Lemon Juice.**—While burning an ounce of alum sprinkle the same quantity of salt over it. When cold, add to this mixture an ounce of pulverized yellow dock root and two quarts of pure rain water and mix all together with the juice of two lemons and let it stand in the sun three or four days, shaking occasionally. If desired this may be weakened with sugar and water. Apply to the gums with a cotton cloth two or three times a day for nursing sore mouth.

THRUSH.

This is described and treated in the Baby Department. Avoid sweets and syrups and pay attention to cleanliness and good feeding. For a mouth wash use 10 grains of borax to an ounce of water or 1 grain of permanganate of potash to 8 ounces of water; or, use 1 part of dilute peroxide of hydrogen to 5 parts of water.

PEOPLE'S HOME REMEDIES.—

1. **Borax and Loaf Sugar.**—Mix pulverized borax with pulverized loaf sugar and apply to the mouth every 2 or 3 hours.

2. **Borax Water.**—For thrush gargle with a solution made by adding a few grains of borax to a cupful of water.

3. **Borax and Glycerine.**—One of the finest applications for thrush is a little borax dissolved in twice as much glycerine.

4. **Golden Seal, Blue Cohosh, Alum and Honey.**—The mother should see that the child's bowels are open; then wash its mouth with a strong tea made of equal parts of golden seal and blue cohosh root, sweetened with honey or sugar. A little alum added to this will be found valuable.

5. **Hyssop, Sage, Sumach, Honey and Borax.**—Make a strong decoction of equal parts of hyssop, sage and sumach berries and sweeten with either sugar or honey and to a pint of the tea add a teaspoonful of pulverized borax. The mother should frequently wash the child's mouth with this mixture.

6. **Red Raspberry Leaves, Blackberry Root, Gold Thread and Sage.**—Make a tea of either red raspberry leaves, blackberry root, gold thread or sage and use as a wash for thrush.

TOOTHACHE.

No one needs to be told when he has the toothache so no symptoms need be given.

Treatment.—Apply a hot salt bag or a hot poultice to the face. A fig or a raisin poultice will be found an excellent remedy for this painful affliction. Take a small fig or a large raisin and boil it in milk until it swells to a good size and then place it between the gum and cheek. You had better have two or three prepared so as to keep the poultice hot. This is a splendid remedy and will stop a great many toothaches.

Put a few drops of oil of cloves or peppermint on a piece of cotton and

insert in the cavity. If the tooth has been pulled and the bleeding from the gums bothers, you can apply a little cranesbill on a piece of cotton.

PEOPLE'S HOME REMEDIES.—

1. **Field Thistle.**—The worst case of toothache can be cured by chewing a piece of the root of the large field thistle which is commonly known as the "bull" thistle; and, by drinking a tea and applying a poultice made from its leaves you can permanently cure the worst case of neuralgia that ever existed. Give it a trial and be convinced.

2. **Salt and Alum.**—Press equal parts of salt and pulverized alum into the cavity of the tooth.

3. **Magic Tooth Drops.**—Take 2 ounces of alcohol; $1\frac{1}{2}$ ounces of sulphuric ether; 1 ounce each of chloroform and camphor gum; $\frac{1}{2}$ ounce each of laudanum, oil of sassafras and oil of cloves and 1 dram of lavender. The person sending this recipe says he puts it up in small bottles, calls it "Magic Tooth Drops" and sells it for 25c. per bottle. To one suffering with toothache it is worth many times this price. Rub on gums frequently or insert in tooth.

4. **Creosote and Oil of Cloves.**—Wet a piece of cotton with a drop of either creosote or the oil of cloves and insert in the cavity of the tooth. Be careful not to let the creosote touch the mouth.

5. **Rum, Brandy, Whiskey, Etc.**—If the toothache comes from decayed teeth it may be relieved by holding rum, brandy, whiskey or diluted tincture of cayenne in the mouth. It will also help to apply laudanum or a mustard plaster externally.

6. **Chloroform, Cinnamon, Cloves and Creosote.**—To half an ounce of chloroform add half a dram each of oil of cinnamon, oil of cloves and creosote and with a little piece of cotton bathe the gums on both sides of the tooth and if there is a cavity insert some of the cotton which has been wet with the mixture.

7. **Raisin and Mustard.**—Split a raisin, put a little mustard on the sticky side and apply to the aching tooth or gum. It will draw out all the soreness.

8. **Raisins and Figs.**—Boil either a raisin or a small fig in milk and apply to the tooth while hot.

PEOPLE'S HOME REMEDIES FOR TEETHING.

(Also see Baby Department.)

1. **Ice.**—The pain of teething will be greatly relieved by allowing the child to hold small splinters of ice in its mouth. The child's health will also be benefited. A mother living in Kentucky writes that after hours of fretfulness her baby would become quiet immediately after giving ice in this manner.

2. **Rubbing.**—Rub the gums freely with the finger or a piece of rubber.

PEOPLE'S HOME REMEDIES FOR BAD BREATH.

1. **Tooth Brush.**—Bad breath often comes from unclean teeth and can be cured by the use of the brush.

2. **Charcoal.**—Take a teaspoonful of powdered charcoal in a glass of water every other morning before breakfast.

3. **Roasted Coffee and Corn.**—Chew either roasted coffee or roasted corn for a bad breath.
4. **Catarrh Treatment.**—Treat the catarrh which causes it.

TOOTH POWDER AND PASTE.

Mix very finely powdered charcoal with castile soap and apply with a brush. Some mix the charcoal with honey. Be sure the charcoal is very finely powdered.

DEFORMITIES, MALIGNANT GROWTHS AND OPERATIONS.

Operations.—Almost every paper we read contains an account of some operation. The opinion is gaining ground that there are too many operations. Is it necessary to operate so often? There is no doubt that there are both good and harm done. Conservatism as to operations is gaining ground and the best physicians now believe that they should be performed only as a last resort after other means have failed. Unfortunately, however, there are some few things in which it is known that all other means of treatment will fail and then an operation is demanded and, of course, if it is absolutely necessary to operate, the earlier the operation is performed the better will be the results.

Appendicitis.—In the past too many operations have been performed for appendicitis. Every case does not need an operation. The pendulum has swung too far toward indiscriminate operations but by the best physicians it is now being brought back within proper limits. The best plan is to wait, say 36 hours, and then operate, if necessary, but if the patient is then getting better the chances are that no operation will be necessary. Lives have been saved by operations for appendicitis, but, on the other hand, many healthy appendices have been removed. That little organ may be good for something; else why did nature put it there.

Malignant Growths.—Many growths may be removed without the knife and it is not wise to resort to an operation unless it be absolutely necessary; yet, if the growth be a genuine cancer then an operation will be demanded and the sooner it be performed, the better. If you have a suspicious lump or sore, go early to a doctor in whom you have confidence and one who is not only a capable physician but is honest and can be trusted. Tell him freely and fully your exact condition and conceal nothing. Do not go to quacks who make preposterous claims in the papers or who offer to perform a cure for so much money. I have cured "so called cancers" with a salve but I never cured a genuine cancer with medicine, and in thirty years of practice I have never seen one cured that way. Medicines and salves are helpful for many bad looking sores and ulcers that are commonly called cancers but for a real cancer the knife is the only cure and the sooner it is applied the better it will be. The X-Ray may be brought into use but it should be carefully used by a reliable man or much harm may be the result.

Cancers of Lip, Tongue, Face, Etc.—The medical profession has called a halt upon indiscriminate operating and conservatism is rapidly gaining ground and yet conservatism must not be carried too far. For instance, if you have a cancer on the lip or tongue or on almost any part of the body for that matter, it should be operated on early; there is no time to lose. The tobacco pipe, by its constant irritation, is frequently the cause of cancer of the lip. I believe smoking was the cause of General Grant's death. As much as I am opposed to unnecessary operations, I cannot advise too strongly in favor of an early operation for malignant growths of this character.

Cancer of the Womb and Stomach.—Cancers of the stomach are hard to get at and yet some wonderful operations have recently been performed upon this organ. What I have said in regard to early operations for the removal of cancers from the lips and tongue also applies to cancers of the womb. Suspicious looking ulcers of the womb should always be carefully watched and their exact nature should be made certain by examination. Many a woman's life has been saved by an early operation in cases of this kind and untold pain and misery have been prevented. The trouble in these cases is that people wait too long.

Tumors and Cancers of the Breast.—Tumors of the breast in women are always suspicious and safety demands their removal. If done early the result is good. What has previously been said regarding the early removal of cancers applies also to cancers of the breast.

Tumors of the Ovaries and Tubes.—Operations on these organs have done much good and they have also done much harm. There is now more desecration in operating on the ovaries and the results show that conservatism pays. Of course when the tumors attain much size and the woman begins to fail in health and strength, an operation should be performed, if possible, for such tumors will not fade away. One summer, not long ago, my wife and I made a visit to my old home in Pennsylvania. A neighbor woman there had a tumor of the right ovary and was fearfully dropsical. I urged her to have an operation as I believed she could not get well without it. After delaying as long as she could she submitted to an operation and is now well and happy. Years ago tapping would have been resorted to and would have been done again and again with no permanent relief.

Eight years ago I saw a young woman whose right ovary was enlarged but only to about the size of a small walnut. Her womb was also tipped back. Although an operation had been advised in this case also, I did not deem it necessary as in the case above. I restored the womb and put in a support and have given her medicine quite regularly since then. Her ovary is reduced in size and she is in comfortable health. Whether an operation is necessary or not depends upon the nature of the case and, as I have said before, it will pay to go to a capable and honest physician and tell him fully about your exact condition.

Growths in the Mouth and Nose.—Whenever a child has growths in the nose like polypi or enlarged turbinated bones or growths in the throat like adenoids or enlarged tonsils, and these growths cause catarrh, headaches, affections of the ear, and are obstructions to breathing, causing the child to breathe through the mouth, then these growths should be removed early and a new child will be the result. Oftentimes a child which is stupid and backward in its school work would be as bright and keen as the rest were these foreign growths removed. Under "Diseases of the Eye, Ear, Nose, Throat and Mouth" you will find more regarding adenoids and enlarged tonsils. The removal of these growths will not only make the child brighter but it will enjoy better health as well.

Birthmarks, Hare Lip, Cleft Palate, Tongue Tie and Cross Eyes.—These deformities should all be attended to when the child is young. Some of the operations for the correction of these deformities are very simple and it is a shame to let a child go through life with these disfigurements if it is possible to correct them. You have no right to let a child go through life with cross eyes or a hare lip.

Cataract and Film on the Eye.—The latter is very easily removed and without much pain. The only thing to do for cataracts is to let them mature, or get "ripe," and then have them removed. Unless the cataract was caused by an injury to the eye the results of an operation are generally good and though you will have to wear glasses after the operation you will be a new person.

Mastoid Disease and Inflammation of the Middle Ear.—These troubles must be carefully watched. Any person with a constant discharge from his ear may at any time have serious trouble. The operation on the mastoid bone for mastoiditis has saved many lives. Persons of a tuberculous tendency who have ear trouble need constant watching and especially when the trouble becomes quite painful or when there are symptoms of brain disease.

Piles, Tuberculous Glands and Diseased Bones.—Operations for these should be performed only when other means have failed. The operation for piles is sometimes quite successful but often other treatments will make this operation unnecessary. This also applies to operations for diseased bones.

Varicose Veins.—This has been treated in another place. Sometimes, when other treatments fail and the enlarged veins give much trouble, benefit will be derived from the removal of one or more of the veins.

Hip Joint Disease—Tuberculosis of Hip Joint—Morbus Coxarius.—This is much more common in children than in adults.

Symptoms.—There is slight lameness at first and pain is complained of in the hip, the thigh, or more frequently, at the knèe. There is a dwindling, or shrinking of the muscles of the thigh and the child does not care to play much. The leg is apparently lengthened and by this time the parents can see that there is something terribly wrong. Don't wait, but do something.

Treatment.—The sooner treatment is begun the better it will be for the patient. Attend to the disease at once and you may save a crippled child. Give the child absolute rest and employ a good physician.

White Swelling—Tuberculosis of the Knee Joint—Other Joint Diseases.—Next to the hip, the knee is the joint most frequently affected. The disease is of tuberculous origin the same as the disease of the elbow or hip joint.

Treatment.—Apply a splint or a plaster of Paris cast. Walk only with crutches and do not touch the ground with the foot of the diseased leg. White swelling is frequently cured in this way. Give strengthening medicines and build up the constitution. Give blood remedies and allow the patient to rest. These instructions apply, also, to other joint diseases.

Crooked Feet—Club Feet—Talipes.—These should be attended to while young. A great many can be straightened without an operation though the operation is very successful. The parents of a child with crooked feet are guilty of absolute cruelty if they will not have them straightened while the child is young.

Knock Knees and Bowlegs—Genu Valgum and Genu Varum.—These should also be attended to in early childhood. They are generally due to rickets.

Treatment.—The child needs strengthening medicines and good food and plenty of out-door exercise. These deformities are very successfully treated but they should be treated early. Don't force the babies to walk too soon for their bones are soft and will bend and at least cause a slight bowing of the legs.

Hammer Finger and Toe.—The treatment is to take off the joint which is bent down for it is annoying, painful and a great deformity.

Rupture—Hernia.—

Causes.—Ruptures are caused by heavy lifting or straining, by falls, and even by severe coughing, such as is common with whooping cough.

Description and Symptoms.—A rupture or hernia is the coming out of part of the intestines and their covering through one of the natural openings in the wall of the abdomen near the groin or the navel. They occur oftener in males than in females and babies sometimes have them. Ruptures are reducible, irreducible or strangulated.

Reducible Hernia.—This is one that can be forced back into place. To do this you should lie on your back and sometimes it will go down itself. If it does not you should bend the leg and lift it up and at the same time gently force the bowels back with your fingers, moving your leg up and in slowly. You will feel the hernia slowly going back. It may take half an hour to get it all in place.

Irreducible Hernia.—This is one that cannot be put back in place. It cannot be put back because it is so large and the opening has become constricted.

Strangulated Hernia.—This is an irreducible hernia where the constriction is so great that the circulation is shut off and it becomes inflamed. This will cause nausea and vomiting and an operation should be performed as early as possible.

Treatment for Hernia.—Wear a perfect fitting support or truss. A truss will cure many cases. The injection treatment is simply a temporary help. It produces inflammation around the opening and partly closes it, but in six months or a year the rupture will be as bad as ever. The same treatment applies to either hernia near the groin or rupture at the navel. The operation is very successful for ruptures and should be performed where the truss fails to effect a cure.

Gall Stones.—The operation for gall stones is very successful. The gall bladder is opened and the stones taken out.

Circumcision and Operation on Clitoris.—Circumcision is the removal of a part of the foreskin of a male. Sometimes the hood of the clitoris of the female needs to be cut or drawn back. Sometimes the foreskin or the hood of the clitoris is so tight as to cause irritation and keep the passions excited and perhaps they are a cause of masturbation. When such is the case these operations should be performed. Parents should carefully look after these conditions as they, instead of a depraved mind, are the causes of many immoral practices.

POISONS.

Symptoms, Antidotes and Emergency Remedies.

What to Do in Case of Poisoning.—Give the antidote at once and then give the emetic if one is needed. If for any reason the emetic cannot be given until some time after the poison has been taken, it should not be given at all for the poison will then have had time to be absorbed into the system and the emetic would then do no good but, on the other hand, would do injury by weakening the patient. In case of poisoning act quickly for there is no time to lose.

“What Not to Do” in Case of Poisoning.—Do not get excited. Do not lose time. Do not cause vomiting or use the stomach pump if the poisoning is due to some corrosive acid.

Acid or Corrosive Poisoning.—The mineral acids destroy the walls of the gullet and stomach. They do not cause death as a result of their being absorbed into the system but as a result of their destruction of the structures with which they come in contact. Some of them, however, produce many dangerous changes in the general system. Some, like carbolic acid, destroy life by paralyzing the nervous system and particularly the nerves of the heart.

The first drink to give in corrosive poisoning like poisoning from carbolic acid, corrosive sublimate or any of the mineral acids, is something mucilaginous or of a soothing nature. Whites of eggs, milk, flaxseed tea, slippery elm water, etc., are mucilaginous drinks. The stomach pump is dangerous when the poisoning is due to a corrosive poison as forcing the tube into the stomach might increase the local danger by puncturing the gullet or stomach. This refers to poisoning from carbolic acid, nitric acid, hydrochloric or muriatic acid, sulphuric acid, acetic acid, corrosive sublimate, etc.

Neither should the pump be used after poisoning by strong alkalies as they also injure the mucous membrane of the gullet and stomach and the tube might do further injury. Emetics would also increase the damage done. Acid poisons are neutralized, or overcome somewhat, by alkalies. Soda, magnesia, chalk, and soap are alkalies. Poisoning by alkalies can be somewhat overcome by giving vegetable acids. Lemon juice and vinegar are vegetable acids. Water is also useful when given in large quantities.

Antidotes You Should Always Keep on Hand.—Antidotes are medicines given to counteract, or overcome, the effects of poisons. Besides soda, magnesia, chalk, eggs, flaxseed, milk, soap, lard, alum, mustard, tea, lemons and vinegar, every family should keep on hand some sulphate of copper in two-grain doses put up in powders. This is especially good for poisoning by matches or phosphorus. Tannin, or tannic acid, is another good thing to always have handy. It is usually given in one-third teaspoonful doses. Jeau-nel's Solution is another good thing to keep handy for emergencies as it is good for a number of poisons. It is composed of 2 ounces of calcined magnesia, 1 ounce of animal charcoal and 20 ounces of water.

Emetics and Other Ways of Producing Vomiting.—Emetics are things

used to produce vomiting. Mustard, alum, lard, salt and fat drippings are emetics because they produce vomiting. The dose of mustard is a tablespoonful in half a cup of lukewarm water. This is to be repeated in from 10 to 15 minutes if necessary. Give alum in from $\frac{1}{2}$ to 1 teaspoonful doses dissolved in a little warm water. Enough goose grease, lard or fat should be given to cause sickness and vomiting. A tablespoonful or a little more will generally give results. Two teaspoonfuls of common salt dissolved in a wineglassful of lukewarm water will often produce vomiting. In most cases of poisoning an emetic is needed unless the poisoning is caused by corrosive or burning acids. If you have an antidote handy, give it first and then quickly get your mustard, salt, alum, lard or other emetic and give it in the doses mentioned to produce vomiting. Syrup of ipecac is a good emetic and if you have it in the house you can give it in teaspoonful doses and repeat every 10 or 15 minutes until the desired effect is produced.

If you use goose grease, lard or drippings you should first heat them until they become liquid. Of course more than a tablespoonful of these may be given if necessary as they are not poisonous. Give them without putting them into water but give lukewarm water afterwards. Use these as mentioned until the doctor comes and in most cases you will have done a good thing and the doctor, when he arrives, can give the medicines needed.

If you are far from a house, or if for any reason there is no emetic handy, you can produce vomiting very quickly by tickling the back of the throat with a feather or with the finger.

Another good way to produce vomiting is to put a rubber tube down the throat. This is to be used only in cases where the poisoning is not caused by corrosive poisons. Take the hard nozzle off of the rubber tube of a fountain or bulb syringe. Some nozzles screw on and if it is one of that kind, the part into which the nozzle screws must also be taken off so that nothing but the soft rubber tube is used. A soft rubber catheter is also good but the wire must be taken out before using. Put the patient in a chair if possible or lift him up in bed. Oil the rubber tube, then have the patient open his mouth or open it yourself by force and put a tooth brush or knife handle in to keep it open. Turn the head a little back and up and slip the tube into the mouth and gently push it down the gullet. The tickling will produce gagging but keep on and the patient will soon vomit. If you use a catheter, tie a strong string to it as it may be short and the string will keep it from going too far. If you cannot get the mouth open, and sometimes the patient will not let you, insert the tube in the nostril and gently push it and when it reaches the back part of the throat it will turn down. Of course this is not pleasant for the patient but this will not be a time to consider tastes. When the tube tickles the gullet it will cause forceful vomiting, throwing out the tube as well as the contents of the stomach. For this reason, it is well when using the tube not to stand directly in front of the patient.

ACETIC, NITRIC, SULPHURIC AND HYDROCHLORIC OR MURIATIC ACIDS.

Symptoms.—All these acids act somewhat alike. There is intense burning in the throat, gullet and stomach. The patient finds it hard to swallow and he sometimes vomits the contents of the stomach which look like coffee grounds mixed with shreds of mucus and blood. The pulse is quick, weak and generally thready.

What to Do.—Emetics are dangerous so do not use them. Give soda, chalk, magnesia or soap. These should be dissolved in water and should be followed with flaxseed tea, slippery elm tea, sassafras tea, milk, or whites of eggs and whichever of these you use it should be followed freely with castor oil.

ACONITE—MONKSHOOD—WOLFSBANE.

Symptoms.—The skin and fingers tingle and feel numb. The throat feels contracted and that makes it difficult to either swallow or speak. The patient looks anxious and worried. The skin is dry at first and in the later stages it may be moist.

What to Do.—First, give a third of a teaspoonful of tannic acid dissolved in half a glass of water. Then put the patient flat on his back with his head lower than his feet. Then inject digitalis hypodermically; or, if you do not have digitalis, inject alcohol. Put hot bricks or hot water bottles around him. Whiskey or brandy may also be given. Use artificial respiration if necessary. Directions for doing this are given under "Drowning."

ALCOHOL.

Symptoms.—These are too well known to need description.

What to Do.—Produce vomiting by giving lukewarm mustard water, using from 1 to 4 teaspoonfuls of mustard; or, give one or two teaspoonfuls of alum dissolved in lukewarm water; or, give lard or salt or produce vomiting by tickling the throat. You may also give strong coffee. Apply cold to the head and warmth to the arms and legs. Use artificial respiration if necessary. This is described under "Drowning."

AMMONIA WATER OR SPIRITS OF HARTSHORN—LYE—CAUSTIC POTASH.

Symptoms.—There is great distress and burning pain along the gullet and in the stomach. There is a choking feeling in the windpipe and vomiting is likely to occur immediately.

What to Do.—If vomiting does not occur immediately, give vinegar water or lemon juice and then follow with milk or dissolved vaseline or sweet oil.

ANTIMONY—TARTAR EMETIC.

Symptoms.—There is vomiting with burning pain in stomach. The patient is very sick at the stomach, there is severe colic, purging, a deathly sick feeling and great bodily weakness.

What to Do.—Give $\frac{1}{3}$ teaspoonful of tannic acid dissolved in half a cup of water, then drink freely of water, warm drinks or strong tea. Give castor oil to empty the bowels and stimulants like whiskey and brandy for the weakness.

ARSENIC—FOWLER'S SOLUTION OF ARSENIC—ARSENIOUS ACID—ROUGH ON RATS—PARIS GREEN—ARSENATE OF COPPER.

Symptoms.—There is a red, dry, raw and thirsty-looking tongue. There is terrible thirst and a burning feeling in the stomach and bowels. The patient is very restless and uneasy. There is vomiting of a watery, burning liquid and there are burning stools. The patient is very weak.

What to Do.—Give Jeauinel's Solution as an antidote if you have it, then give some emetic such as mustard, lard, alum or goose grease; or, produce vomiting by tickling the back part of the throat with the finger or a feather. Then give whites of eggs or plenty of milk and follow this with sweet oil or castor oil and mild drinks like sassafras or slippery elm tea.

ATROPINE—ATROPIA—BELLADONNA—DEADLY NIGHTSHADE.

Symptoms.—There is a dry, aching and contracted throat with thirst and difficult swallowing. There is a flushed face and a beating, throbbing or pounding head. Dilated pupils and throbbing headache.

What to Do.—As an antidote give $\frac{1}{3}$ teaspoonful of tannic acid dissolved in half a cup of water and then give an emetic such as a tablespoonful of mustard in half a teacupful of lukewarm water; or, alum or salt may be dissolved in water and given; or, lard or fat drippings may be dissolved and given. Apply heat to the body. Give good strong coffee and stimulants such as whiskey or brandy.

BISMUTH OXIDE—BISMUTH SUBNITRATE.

Symptoms.—There is violent vomiting, burning in the stomach and bowels and there is diarrhea.

What to Do.—Give Jeauinel's solution as an antidote if you have it. Produce vomiting by giving mustard, alum, lard, or some other emetic. Then give whites of eggs or milk and follow with sweet oil.

BLUE STONE—BLUE VITRIOL—SULPHATE OF COPPER— VERDIGRIS.

Symptoms.—There is sickness at the stomach, vomiting and retching, purging of blood and mucus and a rapid weakening of the bodily powers.

What to Do.—Give emetics such as mustard, alum, or lard. Give soothing drinks like flaxseed or slippery elm tea, eggs, milk or sweet oil. Wash out the stomach with an alkaline solution and give anodynes if necessary.

CANTHARIDES—CANTHARIS—SPANISH FLIES.

Symptoms.—There is burning in the throat and difficult swallowing. The patient vomits and the stomach and bowels are inflamed. There is violent pain in the loins. There is suppression of the urine. It is usually passed frequently but in small quantities and causes pain.

What to Do.—Give mild soothing drinks such as flaxseed or slippery elm teas. Should the case be seen early enough you should produce vomiting.

CARBOLIC ACID—CREOSOTE.

Symptoms.—The mouth and throat are fearfully burnt. The lips, tongue and mouth are white and wrinkled and there is an odor of acid in the breath. There is sickness at the stomach, vomiting, frothy saliva, and difficult swallowing.

What to Do.—These act so quickly there is not usually much you can do for the patient. Get the doctor at once if possible. Epsom and Glauber's salts are the best antidotes. The dose of epsom salts is from 1 to 8 teaspoonfuls and of Glauber's salts, from 1 to 2 tablespoonfuls. One of these is to be given

as an antidote to move the bowels freely. Also give soapy water, whites of eggs, or flour water in large quantities. Apply hot applications and give water and stimulants freely.

CAMPHOR.

Symptoms.—There is an inflamed stomach, vomiting, faintness, dizziness, cold clammy skin, anxious look, weak pulse and great weakness.

What to Do.—Use emetics or other means to produce vomiting. As an emetic you may give mustard, alum, lard, etc. Give freely of lukewarm water. Give 2 tablespoonfuls of epsom salts to move the bowels. Give stimulants such as brandy or whiskey to keep up the strength.

CHLORAL HYDRATE.

Symptoms.—An overdose of this medicine produces deep drowsiness or deep continued sleep and a weak heart action.

What to Do.—To produce vomiting give emetics such as mustard or alum or tickle the throat with the finger or a feather; then give strong coffee and apply heat to the body. Give stimulants if it is necessary to keep the patient awake.

COBALT.

Symptoms.—There is a small and rapid pulse, cold skin, rapid and difficult breathing, diarrhea, pain and burning in the stomach and throat and violent vomiting and retching.

What to Do.—Give emetics such as mustard, alum, salt, lard, etc. Also give warm water and mucilaginous drinks like flaxseed or slippery elm tea or whites of eggs.

CORROSIVE SUBLIMATE—BICHLORIDE OF MERCURY.

Symptoms.—There is vomiting and purging, at first of a watery and then of a bloody mucus. There is burning pain in the stomach and gullet and later there is suppressed urine. The face is swollen and bloated and there is great weakness. This is a terrible poison in its after effects.

What to Do.—Give whites of eggs as an antidote; then give freely of milk or wheat flour water. Give stimulants when it is necessary to keep up the strength.

DIGITALIS—FOX GLOVE.

Symptoms.—There is an irregular pulse and heart action, dizziness, cold sweat, sickness at the stomach and vomiting.

What to Do.—Give $\frac{1}{3}$ of a teaspoonful of tannic acid in a cup half full of water as an antidote. Then give strong tea or coffee whether you have the tannic acid or not. Wash out the stomach if possible and give stimulants. Keep the patient lying down, give hot drinks and put hot bricks or hot water bottles about him.

FLY POISON.

Symptoms.—Depends upon the kind of poison. Cobalt is sometimes used as a fly poison.

What to Do.—Give freely of milk, whites of eggs or wheat flour water.

FOODS.

Poisoning by—cheese, meats, canned goods, etc.

Symptoms.—There is nausea, vomiting, uneasy feeling and pain in the stomach and bowels, weakness, and a deathly sick feeling.

What to Do.—Give an emetic like mustard, alum, salt or lard and then give salts to move the bowels freely. If you have no salts you can move the bowels with injections. Give whiskey or brandy if it is necessary to keep up the strength.

FOOL'S PARSLEY.

Symptoms.—This is sometimes taken by mistake for common parsley. The throat burns and sometimes there is vomiting. There is fainting and a weak pulse.

What to Do.—Give emetics such as mustard, salt or alum, with warm water. Then give flaxseed or slippery elm tea.

GAS.

(Illuminating, fuel or coal gas.)

Symptoms.—The patients are very drowsy and sometimes it is hard to awaken them.

What to Do.—Quickly carry the person into the fresh air and dash cold water in the face. Use artificial respiration if necessary and keep up the work for a long time. Directions for doing this have been given in treating "Drowning." Let the patient smell of ammonia and if necessary keep up the strength with stimulants.

HELLEBORE—BLACK HELLEBORE—SWAMP HELLEBORE—INDIAN POKE.

Symptoms.—There is violent vomiting and purging, bloody, watery stools, cold sweat and dizziness.

What to Do.—Give emetics such as mustard, alum, salt, lard, etc., and plenty of warm water. Give castor oil to move the bowels. Give mild drinks like milk, slippery elm tea or quince seed tea. Give stimulants like brandy or whiskey if necessary.

HEMLOCK—CONIUM.

Symptoms.—Sickness at the stomach and vomiting are early symptoms. There is weakness of the limbs and a staggering gait, double sight, labored speech and finally there is loss of power of motion and loss of sight and speech.

What to Do.—First give an emetic like mustard, alum, lard, warm water, etc., and then give strong coffee immediately. Stimulate the patient by making him exercise. Give mild drinks like slippery elm or flaxseed tea as they delay the action of the poison.

HENBANE—HYOSCYAMUS.

Symptoms.—There is a thirsty, dry and aching throat. The pupils are large, or dilated, and there is dimness of sight. The symptoms are less violent than those of belladonna and stramonium.

What to Do.—Give $\frac{1}{3}$ of a teaspoonful of tannic acid dissolved in half

a cup of water, as an antidote. Give an emetic like mustard, alum, salt, lard, etc., and then give strong coffee. Apply cold to the head and warmth to the feet. Give stimulants like brandy or whiskey, if necessary.

IVY POISONING—POISON OAK—SUMACH BERRIES—RHUS TOXICODENDRON.

Symptoms.—The skin itches and burns; there are swelling blisters and they secrete a watery fluid.

What to Do.—Equal parts of melted lard and tallow makes a soothing dressing. Equal parts of powdered borax and sugar, applied locally, are good. Powdered sugar of lead is one of the best treatments when applied freely upon the affected parts. Take 1 part of oxide of zinc and 5 parts of lard; mix thoroughly, and apply to the affected parts.

IODINE.

Symptoms.—The brown color of the mouth shows when iodine has been taken.

What to Do.—First give an emetic like alum, mustard, lard, or salt, and warm water and then give starch water, flour water or whites of eggs.

LEAD—SUGAR OF LEAD—PLUMBUM—(Painter's Colic).

Symptoms.—This is usually chronic. There is obstinate constipation with cramps. There is sickness at the stomach and vomiting of a white curd-like material. The bowel movements are of a blackish color.

What to Do.—Give from 2 to 4 tablespoonfuls of epsom salts and follow with the whites of eggs, milk, or wheat flour water.

MUSHROOMS.

(Toad Stools.)

Symptoms.—There is sickness at the stomach, retching, vomiting, cold sweat and a cold skin.

What to Do.—Give an emetic such as mustard, alum, lard, or warm salt water; then give strong coffee, whiskey or brandy, if needed, and apply heat to the extremities.

NITRATE OF SILVER—LUNAR CAUSTIC.

Symptoms.—There is burning pain in the stomach, sickness at the stomach, distress, vomiting, and sometimes purging.

What to Do.—Give common dry salt as an antidote and then cause vomiting by giving warm salt water freely. You may give other emetics like alum, mustard or lard and then give milk or the whites of eggs and plenty of castor oil to move the bowels.

OXALIC ACID.

Symptoms.—This acid is used for removing stains but is sometimes taken by mistake for epsom salts or salts of lemon. It is an irritating poison. The patient vomits and the matter vomited is of a greenish brown color. The patient is very weak.

What to Do.—Give lime, magnesia, chalk, or whitewash scraped from the wall. Any of these should be dissolved in water.

OIL OF CEDAR.

* **Symptoms.**—There is heat in the stomach and convulsions.

What to Do.—Cause vomiting quickly by giving mustard, alum, or lard; or give 1 to 5 drops of fluid extract of ipecac. Then give stimulants like brandy or whiskey if necessary.

OIL OF RUE.

Symptoms.—The mouth and throat are dry and there is heat and pain in the stomach and bowels.

What to Do.—Quickly give an emetic like alum, mustard, lard or ipecac. Give stimulants like brandy or whiskey if necessary.

OIL OF SAVIN—SABINA.

Symptoms.—Its odor appears in the breath, perspiration and urine. This is a dangerous remedy for women to use.

Treatment.—If the case is seen early enough, give an emetic such as mustard, alum, lard, etc., and follow with lemonade and bland drinks like flaxseed, slippery elm or quince seed tea.

OIL OF TANSY.

Symptoms.—Weak heart action, pain in lower abdomen, heat in stomach, and convulsions. This is a dangerous medicine for women to use.

What to Do.—If the case is seen early enough give an emetic like alum, mustard or salt and warm water. Follow with bland drinks like slippery elm, flaxseed or quince seed tea. Give castor oil to move the bowels and give stimulants if necessary.

OPIUM—MORPHINE—LAUDANUM—CODEINE.

Symptoms.—There is a sound and snoring sleep with slow and irregular breathing. The skin is cold and clammy and the pupils are very small like pin points. If a large dose has been taken the symptoms increase in severity, the pulse becomes small and the breathing is reduced from 18 down to 5 or 6 breaths per minute. Control of the movements of the bowels is lost and there is stupor and death.

What to Do.—Emetics must be given in large doses and repeated every 10 minutes for 3 or 4 times. You must produce vomiting in some way. Give mustard or alum in warm water or give some other emetic. Inject a pint or two of warm coffee into the bowels and have the patient swallow some if possible. After doing these things make the patient keep moving. This is essential. Send for the doctor the first thing and while he is coming do as before directed.

PHOSPHORUS—RAT POISON—MATCHES.

Symptoms.—There is pain and burning in the stomach with vomiting and purging. Sometimes the vomit and stools are phosphorescent.

What to Do.—Use emetics like alum, mustard or lard. These should be used freely to produce vomiting. The emetic should be followed with 1 or 2 tablespoonfuls of epsom salts to move the bowels. Then give drinks like whites of eggs, sassafras tea, etc. If you have it, use from 2 to 3 grains of sulphate of copper every 10 or 15 minutes to produce the vomiting.

PRUSSIC ACID—HYDROCYANIC ACID.

Symptoms.—There is great weakness, a weak fluttering pulse and cold extremities. As a rule death follows very quickly.

What to Do.—Keep up the strength by the use of whiskey or brandy. Apply cold to the head and spine and friction and blisters upon the chest and put hot applications to the feet.

STRYCHNINE—NUX VOMICA.

Symptoms.—There is a bitter taste in the mouth. The muscles and limbs are rigid; the face drawn into a terrible-looking smile; the lower jaw is immovable; the neck is stiff and the muscles of the body jerk terribly.

What to Do.—Send quickly for a doctor and meanwhile give $\frac{1}{3}$ teaspoonful of tannic acid in coffee or tea. The coffee or tea is better if it has stood for some time. Give plenty of strong coffee even if you do not have tannic acid. Then give emetics in large doses to produce vomiting. You can use alum, mustard or lard; or, you can produce vomiting by tickling the back part of the throat. Put a tooth brush or similar article between the teeth to hold mouth open. Move the bowels freely with large doses of epsom, rochelle or Glauber's salts.

THORN APPLE—STRAMONIUM.

Symptoms.—The pupils are large and the throat dry. The symptoms are similar to those caused by belladonna.

What to Do.—Give $\frac{1}{3}$ teaspoonful of tannic acid in half a glass of water as an antidote. Then give emetics like mustard, alum or lard and follow with coffee and stimulants like brandy and whiskey.

TOBACCO—NICOTINE.

Symptoms.—If taken by a child you can smell it in the breath. There is sickness at the stomach and perhaps vomiting. There is a cold sweat, weak and relaxed muscles, a staggering walk and dizziness.

What to Do.—Give an emetic like mustard, lard or alum and lots of warm water. Give a purgative to move the bowels and give stimulants like brandy, whiskey, wine, coffee or tea, and apply heat.

THE PEOPLE'S PRESCRIPTIONS FOR LINIMENTS, OILS, SALVES, PLASTERS, OINTMENTS, POULTICES, ETC.

CHOICE FAMILY RECIPES GATHERED FROM ALL OVER THE
WORLD.

LINIMENTS.

A liniment is an oily liquid preparation to be rubbed upon the skin. Some liniments are called oils. Liniments are liquid preparations of tinctures and other ingredients for external application to swollen, inflamed or painful parts and should be applied with a piece of flannel or cotton or with the hand. Always shake liniments before using. Never take them internally unless directed to do so and never bring them near a light or fire.

1. **Camphor Liniment.**—Use 1 part of camphor to 4 parts of cotton seed oil. This makes an excellent camphor liniment.

2. **Iodine and Ammonia Liniment.**—A liniment made of equal parts of iodine and aqua ammonia, say 2 ounces of each, well rubbed in, is excellent for sciatic rheumatism.

3. **Golden Oil for Rheumatism.**—To 4 ounces each of spirits of turpentine and linseed oil add 2 ounces each of iodine and aqua ammonia; mix, shake, and apply as needed.

4. **Saltpeter Liniment.**—To a pint of sweet oil add an ounce of pulverized saltpeter and you have a cheap but very effective application for inflammatory rheumatism.

5. **Mustang Liniment.**—Mix 4 ounces each of olive oil and spirits of hartshorn and add 2 ounces of vinegar and a pint of crude petroleum.

6. **Oriental Balm.**—To 2 quarts of raw linseed oil add 2 ounces of gum camphor and $\frac{1}{2}$ ounce each of oils of cajeput and thyme and $\frac{1}{4}$ ounce each of oils of anise and wintergreen. The dose for a grown person is a teaspoonful in a little water internally as often as required. Apply externally 3 or 4 times a day. Good also for bee stings.

7. **Liniment for Man or Beast.**—Mix equal parts of turpentine and coal oil and if for man add a little sweet oil to keep from blistering. This liniment is fine for all kinds of sprains, sores, swellings and frostbites.

8. **Oil of Gladness.**—Mix 2 ounces of camphor gum with 1 ounce each of oils of hemlock, sassafras, cedar and origanum; when the gum camphor is dissolved add 2 quarts of raw linseed oil. It may be applied externally or it may be taken internally in from $\frac{1}{2}$ to 1 teaspoonful doses. This makes a fine liniment and it is inexpensive.

9. **Hamlin's Wizard Oil.**—Take 1 ounce of spirits of camphor, $\frac{1}{2}$ ounce each of oil of sassafras and aqua ammonia, 2 drams of oil of cloves, 4 drams of chloroform and 6 drams each of dilute alcohol and spirits of turpentine.

10. **Perry Davis's Pain Killer.**—Mix 2 ounces of spirits of camphor, 1

ounce of tincture of capsicum, $\frac{1}{2}$ ounce of gum guaiac, $\frac{1}{4}$ ounce of gum myrrh and 3 ounces of alcohol.

11. **Radway's Ready Relief (R. R. R.)**.—To $1\frac{1}{2}$ ounces of soap liniment add half an ounce each of water of ammonia, alcohol and tincture of capsicum.

12. **Giles's Liniment**.—To $\frac{1}{2}$ pint of alcohol add 1 ounce of aqua ammonia, $\frac{1}{4}$ ounce of camphor gum, 15 grains of iodine and 1 dram each of oils of lavender and rosemary.

13. **Dr. Raymond's Liniment**.—To 1 pint of alcohol add 1 ounce each of camphor gum and spirits of turpentine, and $\frac{1}{2}$ ounce each of oil of wormwood and tincture of cantharides. This is for external use only. This excellent liniment for general purposes was sent us by a lady in Canada who has used it with fine results.

14. **Good Samaritan Liniment**.—To 1 quart of best alcohol add oils of hemlock and sassafras, spirits of turpentine, tincture of cayenne, guaiacum, catechu and laudanum, of each $\frac{1}{2}$ ounce; tincture of myrrh, 2 ounces; oil of origanum and camphor gum, each 1 ounce; chloroform, $\frac{3}{4}$ ounce and oil of wintergreen, $\frac{1}{4}$ ounce. This is excellent for rheumatism, weak back, swellings, bruises, cuts, sprains and corns.

15. **Cure-All Liniment**.—Take an ounce each of finely cut opium, gum camphor, gum myrrh, oil of sassafras and pulverized cayenne and half an ounce each of oil of hemlock, oil of wormwood, oil of red cedar, spirits of turpentine and hartshorn and a quart of best alcohol. Mix these and let stand for 10 or 12 days and then strain or filter. This will prove a very effective liniment for general purposes.

16. **Lightning Liniment**.—This is good for rheumatism and nervous affections. Mix an ounce each of chloroform and ether, 2 ounces of laudanum and 4 ounces of spirits of turpentine. Bathe the affected parts with this liniment and it will act like lightning.

17. **Chloroform Liniment**.—Put $\frac{3}{4}$ ounce of gum camphor into 1 fluid ounce of chloroform and shake until dissolved and then add 1 ounce of olive oil and 1 dram of tincture of cantharides. Keep well corked. This is fine for all kinds of sprains and strains.

18. **The Best Liniment**.—To 6 ounces of spirits of ether add 2 ounces each of alcohol, chloroform, spirits of camphor, aqua ammonia and tincture of aconite root. This is for external purposes only. Rub this on the bowels and it will cure any kind of colic. It is good for colic, strains, bunions and all other aches and pains.

19. **German Liniment**.—To 1 quart of alcohol add 2 ounces each of hartshorn and oil of sassafras, 1 ounce each of laudanum and spirits of camphor, $\frac{1}{2}$ ounce of spirits of turpentine and $\frac{1}{4}$ ounce of tincture of kino. The dose is from $\frac{1}{2}$ to 1 teaspoonful internally for colic. This dose may be repeated in 45 minutes if necessary.

20. **Liniment for Old Sores**.—This liniment is one of the very best for sores of long standing and is also good for cuts, bruises and rheumatism. Take 1 pint of alcohol; 2 ounces of aqua ammonia; 1 ounce each of camphor gum, oil of origanum, gum myrrh and tincture of opium and 1 tablespoonful of salt. Let stand for a week, shaking occasionally, and it is ready for use.

21. **German Rheumatic Fluid**.—Put into a quart bottle $\frac{1}{2}$ ounce each of oil of cedar, oil of hemlock, gum camphor and spirits of turpentine and 1 ounce each of oil of sassafras, oil of origanum, aqua ammonia and pulverized

capsicum; then fill the bottle with best alcohol. Externally this is fine for neuralgia, rheumatism and strains. It is also fine for horses.

22. **Cook's Electric Magnetic Liniment.**—To two quarts of best alcohol add 4 ounces each of gum camphor and oil of amber, 1 ounce of finely shaved castile soap, 2 ounces of beef's gall and 6 ounces of ammonia (3F strong). Let stand for 12 hours, shaking frequently. This is good for strains, swellings, sore throat and asthma.

23. **Compound Camphor Liniment.**—Dissolve 6 drams of camphor in a fluid ounce of chloroform and add a fluid ounce of olive oil. This liniment cannot be beaten for sprains, rheumatism and neuralgia.

24. **Kerosene Liniment.**—Dissolve 2 ounces of camphor gum in a pint of kerosene. This liniment will not cost more than ten cents but it is a dandy for rheumatism.

25. **Liniment for Spinal Affections.**—Put into a quart bottle 2 ounces each of oil of origanum, wormwood, gum camphor and spirits of turpentine; then fill the bottle with best alcohol.

26. **Great London Liniment.**—To an ounce each of olive oil, aqua ammonia and chloroform add 10 grains of acetate of morphia. This is a valuable liniment for general purposes.

27. **Gum Liniment.**—To a pint of alcohol add $\frac{1}{4}$ ounce each of cayenne pepper, gum camphor, gum opium and gum myrrh. Let this stand for 3 or 4 days, shaking occasionally.

28. **Lobelia and Cayenne Liniment.**—Into a pint bottle put $\frac{1}{8}$ ounce of pulverized cayenne and 1 ounce of lobelia herb. Fill the bottle with whiskey and in 12 or 15 days it is ready for use. It is fine for cuts, bruises, sprains and strains in either man or beast.

29. **St. John's Liniment.**—Correct for all practical purposes. Take $7\frac{1}{8}$ ounces each of oil of turpentine and seneca oil; $3\frac{2}{3}$ ounces each of sweet oil, origanum, amber, juniper and laudanum; $\frac{1}{2}$ ounce of spirits of ammonia and $\frac{1}{4}$ ounce of gum camphor.

30. **Lime and Oil Liniment.**—This is fine for burns, scalds and sunburns. Mix and shake well equal parts of limewater, camphor and linseed oil.

31. **Camphorated Liniment.**—Dissolve 1 ounce of camphor in 4 ounces of olive oil. This is very fine for colds, sore throat, inflammation of the lungs, swollen breasts and glandular enlargements of all kinds.

32. **Soap Liniment with Soap.**—This is fine for bruises, sore throat, swellings and rheumatism. Into $1\frac{1}{2}$ pints of alcohol shave 2 ounces of white bar soap and when dissolved add 1 ounce each of gum camphor and aqua ammonia (3F strong), 3 drams of oil of rosemary and 2 drams of oil of origanum. This forms a soft soapy mass which is to be applied as other liniments.

33. **Soap Liniment without Soap.**—This is good for croup, rheumatism, swellings and tumors. Mix 2 ounces of sweet oil, 1 ounce of aqua ammonia, $\frac{3}{4}$ ounce of spirits of camphor and $\frac{1}{2}$ ounce of spirits of turpentine.

34. **Soap Liniment with Spanish Flies.**—This is used externally to stimulate chronic bruises, rheumatic pains, sprains and swellings. Take $1\frac{3}{4}$ ounces of soap liniment and add to it $\frac{1}{4}$ ounce of tincture of Spanish flies. Shake thoroughly.

35. **Nye's Liniment.**—Used for all kinds of bruises, sprains and fresh wounds of man or beast. It is also good for croup and rheumatism. To 2

quarts of alcohol add $\frac{3}{4}$ pound of camphor gum, 2 ounces each of oil of spike and origanum and $1\frac{1}{2}$ ounces of tincture of capsicum.

36. **British Oil.**—Take 2 ounces of oil of turpentine, 2 ounces of oil of linseed or flaxseed, 1 ounce of oil of amber, 1 dram of oil of juniper, $\frac{3}{4}$ ounce of petroleum and $\frac{1}{4}$ ounce of senega oil; put together and shake thoroughly.

37. **Diuretic Liniment for Kidney and Bladder Troubles.**—To 6 ounces of best alcohol add 1 ounce each of oils of juniper, horsemint and spearmint. Rub thoroughly over the kidneys 3 or 4 times a day.

38. **Liniment for Burns.**—Equal parts of cod liver oil and chloroform used as a liniment will relieve the pain of burns.

39. **Camphor and Onion Liniment.**—This is fine for quinsy, scrofulous swellings and tumors. Simmer together for 5 minutes 8 ounces of olive oil and half an ounce of ripe onion; strain, and add 2 ounces of gum camphor and rub until dissolved.

40. **Cramp Liniment.**—Heat 8 ounces of whiskey or rum and pour upon half an ounce of cayenne. Dip cloths in this and apply to the affected parts and the pain of cramps will soon be relieved.

41. **Hartshorn Liniment.**—Take 8 ounces of sweet oil, 2 ounces of spirits of hartshorn and 1 dram of cayenne; cork up and shake occasionally for a week and it is ready for use. Used for sprains and bruises.

42. **Mexican Mustang Liniment.**—Take 2 ounces of petroleum, 1 ounce of ammonia water, $\frac{1}{2}$ ounce of naphtha, $\frac{1}{2}$ ounce of crude oleic acid and 1 dram of brandy.

43. **St. Jacob's Oil.**—To 2 quarts of alcohol add 1 ounce each of gum camphor, chloroform, chloral hydrate and sulphuric ether and $\frac{1}{2}$ ounce each of oil of origanum, tincture of opium and oil of sassafras. For external use only.

44. **Dr. White's Liniment.**—Dissolve half an ounce each of saltpeter and camphor gum in half a pint of strong alcohol; add half a pint of spirits of turpentine and a quart of beef's brine which has been scalded and skimmed. Shake well before using. This is excellent for weak back and spinal troubles of all kinds.

45. **Cayenne Liniment.**—Steep, but not boil, two teaspoonfuls of cayenne pepper in a teacupful of good vinegar, strain, and bottle for use. This will cause heat and is fine for rheumatism.

46. **Vinegar and Camphor Liniment.**—Take half a pint each of strong cider vinegar and spirits of camphor, a pint of soft water and $\frac{1}{2}$ ounce of muriate of ammonia. Wet sheets in this liniment and wrap the patient suffering with inflammatory rheumatism.

47. **Liniment for Ladies.**—To a quart of good alcohol add an ounce each of camphor gum, laudanum, sulphuric ether, chloroform, oil of cedar and tinctures of capsicum and myrrh; and also, $\frac{1}{4}$ ounce each of cajeput, wormwood, cloves and oil of peppermint. This liniment is neither very burning nor oily like many liniments and is therefore particularly liked by ladies. This is a fine liniment and especially for rheumatism.

48. **Golden Oil or Strong Camphor Liniment.**—To a pint of good alcohol add 2 ounces of camphor gum, an ounce each of oil of origanum, sassafras, hemlock and tincture of cayenne and half an ounce each of spirits of turpentine, oil of cajeput, sulphuric ether and chloroform. Keep well corked. This is one of the very best and strongest liniments made, though not quite as

cheap as some. As a pain killer it may be used both internally and externally. The internal dose is from 15 drops to a teaspoonful in a little sweetened water. It may be repeated in 20 minutes if necessary.

49. **Magnetic Liniment.**—Take 1 pint of alcohol, 1 ounce each of oil of origanum and sulphuric ether and 2 drams each of tincture of cantharides and muriate of ammonia. For external use only.

50. **Electric Liniment.**—Take aqua ammonia, spirits of turpentine, sweet oil, tincture of camphor and laudanum; of each equal parts. This is a valuable liniment for all kinds of acute pain.

51. **Dr. Vicker's Celebrated Embrocation.**—To 1 quart of spirits of turpentine add 1 ounce of oil of sassafras, 1 ounce of oil of origanum, 1 ounce of oil of amber and 1 teaspoonful of black oil of amber to color. This is fine for sore throat, sprains, bruises, rheumatism and lumbago and is also good for thiselo and poll evil in horses. The gentleman sending this recipe lives at Alliance, Ohio and is over 80 years old. He says: "We have had this recipe in the home for over 50 years and always keep it on hand. We think it is the best liniment we have ever used."

52. **Arthritic Liniment.**—Take 1 gallon of alcohol, $\frac{3}{4}$ pint of spirits of turpentine, $\frac{3}{4}$ pound of African cayenne pepper, $\frac{1}{4}$ ounce oil of hemlock, $\frac{1}{4}$ ounce oil of pennyroyal, $\frac{1}{4}$ ounce oil of origanum, $\frac{1}{4}$ ounce of oil of sassafras and $1\frac{1}{2}$ ounces of camphor gum. Tincture the cayenne pepper in the alcohol and cut the camphor and the oils in the turpentine. Mix and shake well and the liniment is ready for use. The man sending this recipe says: "I secured this recipe during the war of 1864. It is a good all-round liniment."

53. **Solon Day's Liniment.**—Mix 2 ounces of ammonia, 2 ounces of alcohol and 15 grains of iodine. Keep well corked. This is a first class liniment. The iodine will cause it to stain the parts, however.

54. **Liniment for Colds and Neuralgia.**—Take $\frac{1}{4}$ ounce each of camphor, spirits of turpentine, aqua ammonia and sweet oil and apply externally for cold in the chest, neuralgia, sore throat and rheumatism. For external use only.

55. **Simple Liniment.**—To half a pint of olive oil, add a small cake of camphor, a tablespoonful of coal oil, 15 drops of carbolic acid and bring to a boil.

56. **Dr. Ritter's Liniment.**—Take 2 ounces of camphor gum, 1 ounce of ammonia water, 1 ounce of turpentine, 3 ounces of sweet oil, 3 ounces of kerosene, 2 ounces of laudanum and 4 ounces of alcohol. This will make a pint in all. First dissolve the camphor in the alcohol, then add the other ingredients and mix thoroughly. Shake each time before using.

57. **Four Oil Liniment.**—Take equal parts of oil of cedar, oil of cajeput, oil of cloves and oil of sassafras. Rub on the affected parts 3 or 4 times a day. Good for rheumatic and other painful affections.

58. **Asthma Liniment.**—Mix 1 ounce of oil of stillingea, $\frac{1}{2}$ ounce of oil of cajeput, 2 drams of oil of lobelia and 2 ounces of alcohol. This may be weakened if necessary by using but half the quantity of the oils and 3 ounces of alcohol. This liniment is good for asthma, croup, St. Vitus' dance, sprains and rheumatic pains. It is very prompt and effective in asthma.

59. **Whooping Cough Liniment.**—Mix 1 ounce of oil of stillingea, 1 ounce of rectified oil of amber, 3 drams of oil of lobelia and 2 ounces of olive

oil. This is to be used the same as other liniments. It is good for whooping cough, asthma, chorea, rheumatism and sciatica.

60. **Asthma and Pneumonia Liniment.**—Take $2\frac{1}{2}$ ounces of rose water, the yolk of 1 egg, 3 ounces of oil of turpentine, $\frac{1}{2}$ dram of oil of lemon and 1 ounce of strong vinegar. Add the rose water slowly to the yolk and rub together; then add the turpentine and lemon; pour the mixture into a pint bottle and shake well and then add the vinegar and shake quickly and briskly. Keep well corked. This is good for asthma and pneumonia when rubbed thoroughly with a cloth upon the stomach, chest and throat.

61. **Pleurisy Liniment.**—Take 2 ounces of tincture of capsicum, 2 drams of tincture of opium, 3 drams of water of ammonia, 2 drams of oil of origanum, 1 dram of oil of cinnamon and 1 dram of tincture of camphor. This is good to relieve the pain of pleurisy, rheumatism and neuralgia.

62. **Nerve Liniment and Pain Killer.**—Take $1\frac{1}{2}$ ounces of spirits of hartshorn, $1\frac{1}{2}$ ounces of sulphuric ether, $\frac{1}{2}$ ounce of spirits of turpentine, $\frac{3}{4}$ ounce of sweet oil, $\frac{1}{2}$ ounce of oil of cloves and 1 ounce of chloroform. This is for external application and is good for man and beast.

SALVES AND PLASTERS.

1. **Mother's Salve.**—Melt together 1 ounce each of lard, rosin and beeswax; remove from the fire and when practically cool add 1 ounce of oil of spikenard.

2. **Salve for Cuts, Bruises and Corns.**—Take 1 pound each of rosin, beeswax and sheep's tallow and $1\frac{1}{4}$ pounds of raw linseed oil. Simmer down until of the proper consistency. A lady writes: "We think so much of this recipe that my granddaughter has taken it to India with her where she has gone as a missionary."

3. **Gunpowder Salve for Chilblains.**—Rub together equal parts of lard and gunpowder and you will have a salve that will cure frostbites and chilblains.

4. **Salve for Chaps and Cracks.**—Simmer together $\frac{1}{2}$ ounce of beeswax, 1 ounce of mutton tallow and 5 ounces of rosin. Make into rolls and when needed spread on a cloth and apply as hot as can be borne.

5. **Salve for Abscesses, Broken Breasts and Fever Sores.**—Steep $\frac{1}{2}$ ounce of tobacco in 1 pint of rain water, boil down to 1 gill and strain. Then add $\frac{1}{2}$ ounce each of melted lard, beeswax and rosin and simmer until it makes a thick salve and then add a gill of old rum.

6. **Felon Salve.**—Shave some soap very fine, moisten with spirits of turpentine and apply to the felon. A fine salve for felons.

7. **Effectual Corn Salve.**—Simmer together a teaspoonful each of pine tar, brown sugar and saltpeter. After paring the corn spread the salve on a piece of thin leather and bind on for two or three days. A piece of old kid glove will do nicely for the leather.

8. **Carbolic Salve or Balsam.**—Melt together 10 ounces of vaseline and 5 ounces of white wax, add an ounce of balsam of fir and when nearly cool stir in half an ounce of carbolic acid. Put into a glass jar or tin box and keep tightly covered. This is fine for burns and sores.

9. **Salve for Cracks, Wounds and Pains.**—Melt $1\frac{1}{4}$ pounds of rosin and when it has cooled a little stir in 2 ounces of balsam of fir, then a pint of

spirits of turpentine and lastly, 1 ounce of oil of hemlock. If this is too soft add a little more rosin and use a little less turpentine.

10. **Salve for Wounds, Burns and Old Sores.**—Take half a pound of beeswax, half a pound of salty butter, a quarter of a pound of turpentine and 6 ounces of balsam of fir. Simmer these together for half an hour and when cool the salve is ready for use. A lady in Massachusetts writes that she has used this for years for wounds, burns and old sores and has never found its equal.

11. **Onion Salve.**—Slice a medium sized onion into 4 ounces of vaseline, stew together and strain. Apply two or three times a day to inflamed wounds.

12. **Green Salve or Ointment for Ulcers and Old Sores.**—Melt together an ounce each of rosin and beeswax, stir in 4 ounces of either lard or mutton tallow, take from the stove and add 1 dram of pulverized verdigris and stir until cold. Cleanse the parts twice a day with pure castile soap and apply the salve. If there is any proud flesh, sprinkle on a little pulverized burnt alum before applying the salve.

13. **Black Healing Salve.**—Put $1\frac{1}{4}$ pounds of olive oil into a kettle and bring to a boil; stir in $\frac{1}{2}$ pound of powdered red lead and continue stirring until it is of a deep brown color; then remove from the fire and stir in 2 ounces of finely shaved beeswax, 2 ounces of unsalted butter, 4 ounces of white turpentine, 6 ounces of honey and lastly, 4 ounces of powdered gum camphor. Spread on a cloth and apply. This is excellent for ulcers, wounds, burns and inflammations.

14. **Green Mountain Salve, also White Salve.**—These salves are excellent for rheumatism and weak back, bruises, cuts and corns. Take 5 pounds of rosin; $\frac{1}{4}$ pound each of beeswax, mutton tallow and burgundy pitch; 1 ounce each of balsam of fir, oil of hemlock, oil of red cedar, Venice turpentine and oil of origanum; $\frac{1}{2}$ ounce oil of wormwood and 1 ounce of finely pulverized verdigris. Melt the rosin, beeswax, tallow and pitch together; then add the other articles, having previously rubbed the verdigris into a little of the oils. Stir well, pour into cold water and work as wax. When cool enough, roll and cut into sticks. This is the Green Mountain Salve and is unequalled for rheumatism and weak back, shoulders or side and has cured corns. A plaster on the stomach will relieve dyspepsia. It is applied by spreading on cloths or thin leather. The White Salve is the same only the verdigris is left out. The White Salve is used where the skin is broken as in ulcers, bruises and cuts. By dividing the batch, both kinds may be made at the same time. This is a grand salve and if you once have it in the home you will never be without it. Put a piece in your grip when you travel and it will often come in handy.

15. **Spice Plaster.**—Take an ounce each of powdered ginger, cinnamon, cloves and black pepper and a dram of pulverized cayenne; mix, and add a fluid ounce of tincture of ginger and enough honey to make a thick paste. When applied over the stomach this is excellent for sickness at the stomach and vomiting.

OINTMENTS.

1. **Simple Ointment.**—Mix 2 ounces of sulphur with $\frac{1}{2}$ pound of melted lard and stir until cold. This is one of the finest ointments made for piles, tetter, salt rheum, itch and skin diseases in general.

2. **Trask's Ointment.**—Mix thoroughly equal parts of lard, chopped raisins and fine cut tobacco. This is one of the best pile remedies known.

3. **Sweet Clover Ointment.**—Stew some sweet clover in lard and add equal parts of beeswax and white pine turpentine until it forms an ointment of the proper consistency. A fine ointment for general purposes.

4. **Wood Soot Ointment.**—Mix an ounce of finely pulverized wood-soot with four ounces of lard. Spread on cotton batting and apply to burns, scald-head and other skin diseases.

5. **Catarrh Ointment.**—Simmer together $\frac{1}{2}$ ounce of pure tar and 2 ounces of fresh unsalted butter. Apply inside the nostrils 4 or 5 times a day.

6. **Magnetic Ointment.**—Take $\frac{1}{2}$ pint of oil of butter and $\frac{1}{2}$ ounce each of oil of bergamot and oil of origanum. This is fine for bruises, fresh cuts, burns and for softening and healing old sores.

7. **Ointment for Tumors, Caked Breasts and Bruises.**—Take half a pound of fresh tops and flowers of St. John's root and the same quantity of green stramonium leaves; bruise both together; mix with one pound of lard and gently heat for an hour.

8. **Pile Ointment.**—Rub 2 drams of sulphur and 4 drams of lard together between 2 pieces of lead until well blackened. This is a great remedy for blind or bleeding piles.

9. **Tetter Ointment.**—Take fresh butter, 4 ounces; Venice turpentine, 1 ounce; red precipitate, 1 ounce; melt the butter and turpentine together and while warm stir in the precipitate and mix well. Rub on a little once or twice a day. An excellent ointment for tetter, ringworm, and eruptions of the skin.

10. **Ringworm Ointment.**—Mix 1 part of citrine ointment with 7 parts of vaseline and rub upon the skin twice a day. This is good for the itch as well as ringworm.

11. **Ointment for Itch and Ringworm.**—With 1 ounce of benzoated lard mix 1 dram of sulphur and 1 dram of tar ointment. Rub into the skin 3 times a day until well absorbed.

12. **Zinc Ointment.**—Mix 2 drams of oxide of zinc, 5 drams of lanolin, 1 dram of albolene and 10 grains of salicylic acid.

13. **Tar Ointment.**—Melt a pound of suet, add the same amount of tar and stir continually until cold. This is a fine application for scabby eruptions such as scald-head, etc.

14. **Ointment for Itching.**—Powder 20 grains of gum camphor with a few drops of alcohol and mix with an ounce of oxide of zinc ointment and then rub in 12 grains of red precipitate.

15. **Spanish Fly Ointment.**—Take a small quantity of vaseline and rub into it as much tincture of cantharides as it will take up. Bathe the feet, wipe dry, and apply at bed time to cure chilblains. Do not apply so frequently or thoroughly as to cause blistering.

16. **Herb and Turpentine Ointment.**—Bruise 1 ounce each of worm-wood, horehound, double tansy, catnip and hops and cover with lard and spirits. Let stand for two weeks, simmer and strain. To each ounce of the ointment add an ounce of turpentine.

17. **Carbolic Ointment.**—Work thoroughly 10 drops of carbolic acid into an ounce of vaseline. Fine for burns and scalds.

18. **Elder Flower Ointment.**—Cover elder flowers with lard which has

been warmed just enough to melt it. Steep for 10 or 12 hours, always keeping the lard just warm enough to be melted. After the steeping, strain the mixture through linen without squeezing. When cold the ointment will be found excellent for burns, scalds and erysipelas. Ointment may be made in this manner from any kind of flowers.

19. **Spermaceti Ointment.**—Melt over a slow fire $1\frac{1}{2}$ ounces of olive oil, 3 dram of spermaceti and 1 dram of white wax; stir until cold. This will not keep long so it is not well to make it in large quantities. It is used for blisters, chaps and chafed places.

20. **Ointment for Chilblains and Frostbites.**—To 2 pounds of lard add $\frac{1}{2}$ pound each of fresh leaves of henbane, stramonium and bitter sweet and $\frac{1}{2}$ pound of elder bark. Simmer together for 2 hours and strain.

21. **Ointment for Shingles and Skin Diseases.**—Boil swamp sassafras and yellow dock roots, an ounce of each, to a strong decoction and add a pound of lard and simmer to an ointment.

22. **Ointment for Piles and Skin Diseases.**—Cover 2 ounces of fine cut tobacco with spirits and add $\frac{1}{2}$ pound of lard and simmer over a slow fire until the tobacco is a little crisp and then strain. This ointment is especially valuable for piles.

23. **Ointment for Itch, Scrofulous Ulcers and Scald-Head.**—Boil 2 ounces of yellow dock, 2 ounces of wood soot and $\frac{1}{2}$ ounce of good tobacco in a gallon of water until it has evaporated to half a gallon; then strain and boil down to 1 pint and add 2 ounces each of tar and unsalted butter and simmer slowly until there is but $\frac{3}{4}$ of a pint and then add 1 ounce of spirits of camphor and stir until cold.

POULTICES.

Poultices should be applied soft and moist but not thin enough to run over the surrounding parts. They are usually applied warm and renewed before they become dry or cool. Various poultices are used for the purpose of scattering tumors, stimulating, checking mortification, lessening inflammation, hastening the formation of pus or drawing poison from wounds.

1. **Soothing Poultices.**—Poultices of bread and milk, flaxseed, corn meal or slippery elm are used where a soothing effect is desired as they retain heat and moisture a long time. The bread and milk and flaxseed poultices are best for boils, felons and abscesses when they are forming. After the matter begins to discharge the slippery elm poultice should be used. Slippery elm is also best for deep ulcers and carbuncles.

2. **Stimulating Poultices.**—Mustard poultices are stimulating as also are carrot poultices. Boil two or three garden carrots until soft and mix with a small quantity of flour or powdered elm bark. This poultice is useful for old ulcers and painful tumors.

3. **Charcoal Poultice.**—Let an ounce of bread stand in 5 ounces of hot water for 10 minutes near the fire and then add 5 drams of powdered flaxseed and 2 drams of finely powdered charcoal, thus forming a soft poultice. This will be found excellent for ulcers and old sores.

4. **Slippery Elm Poultice.**—Take the desired quantity of powdered elm bark and add enough hot water or milk to form a soft poultice. This is valuable when a soothing or softening effect is desired.

5. **Lobelia Poultice.**—To equal quantities of lobelia and powdered elm

bark add enough hot weak lye water to make a poultice. This has fine drawing power and is excellent for boils, felons, stings, wounds, fistula, white swelling, painful swellings, inflammation of the breasts and various other inflammations.

6. **Poke Root Poultice.**—Roast some poke root in hot ashes until soft, then wash it and make a poultice with hot water. This is good for scattering boils, tumors, felons and caked breasts.

7. **Yeast Poultice.**—Poultices made of yeast are excellent for ulcers that slough and have an offensive odor.

8. **Corn Meal Poultice.**—This poultice is made by cooking corn meal in hot water until it sticks together. Apply to the seat of the pain as hot as it can be borne.

9. **Mullein Poultice.**—Boil mullein leaves in water and with this make a thin mush with corn meal and add just a little vinegar.

10. **Cranberry Poultice.**—Bruise the desired quantity of cranberries and apply to the throat for quinsy and to swollen glands in scarlet fever and other diseases. Also fine for erysipelas. It gives relief in a few hours.

11. **Thorn Apple Poultice.**—Bruise the desired quantity of leaves and moisten with water; apply to the abdomen for peritonitis and to the crotch for enlarged prostate gland and for passing the catheter to draw the urine in the male. This poultice should remain on the parts for about an hour.

12. **Poultice for Offensive Ulcers.**—Soak 2 ounces of bread in 10 ounces of water and gradually mix with it 10 drams of powdered flaxseed to make a soft poultice and then add 2 drams of powdered charcoal and when the poultice is prepared sprinkle another dram of powdered charcoal over the surface of it before applying.

13. **Flaxseed Poultice.**—While water is boiling add flaxseed to it very slowly until it becomes as thick as porridge. Continue the heat with constant stirring for 10 minutes, then spread on cotton and cover with gauze or cheese cloth which makes the covering next to the skin. Cover the whole with silk or flannel to retain the heat and if necessary, bandage snugly to keep it from slipping. Renew when cool.

14. **Bran Poultice.**—When a light but thick poultice is required, bran should be boiled in water and placed in a bag and tied tightly. Press out the surplus water and apply to the parts. Cover well as it cools quickly.

15. **Hop Poultice.**—Use hops instead of bran and make and apply in the same way.

16. **Spice Poultice.**—Mix equal parts of ground cinnamon, cloves, allspice and ginger and if you wish to have it very strong you can add $\frac{1}{4}$ part of cayenne pepper. Place this in a flannel bag and spread evenly and wet with alcohol or whiskey before applying. This will last for a long time by re-wetting. It is fine for pains in the abdomen.

FOMENTATIONS.

The object of fomentations is to reduce swelling and inflammation. They are used either warm or cold. Some medicine is added to water or some herb is steeped in water and cloths are then wrung out of it and applied. Or, herbs are steeped, put into a bag, and applied hot. Cloths wrung out of hot or cold water either clear or medicated are sometimes called compresses. In adding tinctures to water for this purpose, from 10 to 20 drops of the tincture is usually added to half a pint of water. Compresses or fomentations

should be changed frequently to keep them either hot or cold as desired. Cover them with dry cloths to keep the water from running upon other parts.

1. **Arnica.**—Put from 10 to 20 drops of tincture of arnica into half a pint of water and use for sprains and bruises.

2. **Calendula.**—Put 10 or 20 drops of tincture of calendula into half a pint of water and use for cuts.

3. **Urtica Urens.**—Put from 10 to 20 drops of tincture of urtica urens into half a pint of water and use for either scalds or bruises.

4. **Hops.**—Hop fomentations are made by dipping sacks of hops into hot water and applying to the parts. Cover with dry cloths to hold the heat. Other fomentations are made by adding equal parts of wormwood and tansy or lobelia and stramonium leaves to the hops and applying in the same way.

5. **Mullein.**—Fomentations of mullein leaves are excellent for bruises and swellings.

6. **Turpentine Stupe.**—Sprinkle a few drops of turpentine on a flannel cloth which has first been wrung out of hot water. Apply this as hot as possible and cover well with oiled silk and dry flannels. Change often to keep it warm. Turpentine should not be applied after the skin is reddened.

POWDERS.

When a single ingredient is pulverized it is called a simple powder and when two or more ingredients are pulverized and mixed together it is called a compound powder. Powders should be kept in air tight bottles or cans and some of them need to be protected from the light. This can be done by painting the bottle black. There are many different kinds of powders and you will find many of them described in the treatment of various diseases and in the preparation of the herbs.

1. **Compound Powder of Rhubarb.**—Mix thoroughly 2 ounces of powdered rhubarb, a pound of magnesia and an ounce of pulverized ginger. Keep in air tight bottles. This is a standard remedy used by physicians for bowel complaints of children. The rhubarb moves the irritating material from the bowels and the ginger stimulates the membrane to action.

PATENT MEDICINES.

VALUABLE PRESCRIPTIONS FOR MAKING SECRET PREPARATIONS.

In the preparation of this department we are indebted to the Secretary of the American Medical Association for references to the Leading Medical Journals of the world who have had these medicines chemically analyzed. Patent medicine manufacturers sometimes change their formulas slightly so as to avoid having them become public, so all we can claim is that these prescriptions will make preparations which are similar to the originals in their action and uses. We have tried to give only the most valuable ones and though Dr. Ritter did not compile this department we have employed one of the best analytical chemists in the country to carefully go over the prescriptions with the view of eliminating the harmful ones and adding the *uses* and *doses* of each as otherwise the prescriptions would be of little value.

AYER'S SARSAPARILLA.

Fluid extract sarsaparilla	3 oz.
Fluid extract stillingia	3 oz.
Fluid extract may apple	2 oz.
Fluid extract yellow dock	2 oz.
Sugar	1 oz.
Iodide potassium	90 grs.
Iodide iron	10 grs.

Used for so-called diseases of the blood, pimples, blotches, etc. Dose for adults—one teaspoonful three times a day.

AYER'S CHERRY PECTORAL.

Tincture of blood root	2 dr.
Acetate of morphia	3 gr.
Wine antimony	3 dr.
Wine ipecac	3 dr.
Syrup wild cherry	3 oz.

Used for bronchitis, coughs, colds and irritation of the throat. Dose for adults—one teaspoonful every four hours.

AYER'S HAIR VIGOR.

Acetate of lead	1½ oz.
Precipitated sulphur	1 oz.
Glycerine	7 oz.
Water	40 oz.

Add a few drops of any perfume. Shake well before applying. Apply once a day until color of hair deepens, then once a week.

ANTI-FAT.

Anti-fat is prepared from fresh bladder wrack. It is the fluid extract of this plant, 15 pounds of which is used in making 80 oz. of the extract, with proof spirit as the menstruum.

ASEPTIN.

Alum	1 oz.
Borax	2 oz.

These should be powdered and mixed thoroughly together. This is a preservative for meat, milk, etc.

ARABIAN BALSAM.

Oleum terebinth	4 dr.
Oleum origani	1 oz.
Oleum gossypium	15 oz.

Mix together; four or five drops.

ALLEN'S LUNG BALSAM.

Tinct. lobelia	4 oz.
Tinct. sanguinaria	4 oz.
Tinct. opium	2 oz.
Tinct. capsicum	$\frac{3}{4}$ oz.
Essence anise	$\frac{1}{2}$ oz.
Essence sassafras	$\frac{1}{2}$ oz.
New Orleans molasses	1 qt.

Slowly add the other ingredients to the boiling molasses.

When cold add enough water to make three pints. Used for bronchitis, coughs, colds and inflammation of the air passages. Dose for adults—one teaspoonful every four hours.

BARKER'S BONE AND NERVE LINIMENT.

Camphor	70 gr.
Oil of turpentine	2 fl dr.
Oil of thyme	1 fl. dr.
Oil of tar	$\frac{1}{2}$ fl. dr.
Franklin oil (lubricating oil, black oil), enough to make 2 fl. oz.	

For rheumatism, chilblains, bruises and sprains.

BEECHAM'S PILLS.

Sulphate of sodium	12 gr.
Saffron	12 gr.
Rhubarb	45 gr.
Aloes	240 gr.

Mix and make into pills containing 3 grains each.

Used as a tonic laxative in constipation, biliousness, etc. For adults, take one to three at bed time in a glass of water.

BRITISH OIL.

Petroleum	2 oz.
Oil juniper	2 dr.
Oil turpentine	2 dr.
Oil amber	8 oz.
Linseed oil	24 oz.

Mix thoroughly. Useful for kidney, bladder and urinary troubles, etc. Dose—three to five drops.

BAREEL'S INDIAN LINIMENT.

Tincture capsicum	2 dr.
Oil sassafras	1 oz.
Oil origanum	1 oz.
Oil pennyroyal	1 oz.
Oil hemlock	1 oz.
Alcohol	2 qts.

Mix thoroughly. Used for sprains, rheumatism, sciatica, lumbago, etc.

BAY RUM.

French proof spirit 1 qt.
 Extract of bay (soluble) 12 dr.
 Does not need filtering. Color with caramel.
 A delightful dressing for the hair.

"BIG G" INJECTION.

Zinc acetate 15 gr.
 Berberine hydrochlorate 15 gr.
 Glycerine 4 dr.
 Water, sufficient to make 8 oz.
 Used for gonorrhea, leucorrhea (whites), cystitis, etc. Use as an injection three times a day.

BUCKLEN'S ARNICA SALVE.

Extract arnica 1 oz.
 Vaseline 2 oz.
 Resin cerate 8 oz.
 Raisins, seedless 8 oz.
 Tobacco, fine cut ½ oz.
 Water a sufficient quantity.
 Put the tobacco and raisins into a pint of water and boil until the strength is extracted; express the liquid and evaporate to four ounces. Mix the liquid with the arnica which has been softened with a little hot water; add this to the vaseline and resin cerate which have been previously warmed and mix well.

BROWN'S BRONCHIAL TROCHES.

Extract of licorice, powdered 2 lb.
 Sugar, powdered 3 lb.
 Gum arabic, powdered ½ lb.
 Cubebs, powdered ½ lb.
 Extract conium 2 oz.
 Mix all together, moisten carefully with water to make a stiff dough, roll out in a thin sheet with a rolling pin and cut into small squares or ovals. Excellent troches for tickling in the throat, coughs, colds, etc.

BOSCHEE'S GERMAN SYRUP.

Carbonate of magnesia 3 dr.
 Oil of tar 1 fl. dr.
 Fluid extract wild cherry 6 fl. dr.
 Fluid extract ipecac. 4 fl. dr.
 Tincture of opium 4 fl. dr.
 Water 6 fl. oz.
 White sugar 10 oz.
 First, triturate the magnesia with the oil of tar; then with a mixture of the water and fluid extracts; filter and without heat form a solution with the sugar by agitation.
 An excellent remedy for bronchitis, coughs, colds and inflammation of the air passages. Dose for adults—one teaspoonful every three hours.

CARTER'S LITTLE LIVER PILLS.

Podophyllin 3 gr.
 Aloes (Socotrine) 7 gr.
 Mucilage of acacia sufficient quantity.
 Mix, and divide into 24 pills.
 Used for headache, biliousness, constipation, etc. Take from one to four pills at bed time with a glass of water.

CASTORIA.

Senna	8 dr.
Rochelle salts	2 oz.
Manna	2 oz.
Bruised fennel	3 dr.
Boiling water	16 fl. oz.
Sugar	16 oz.
Oil of wintergreen	to flavor.

Pour the boiling water over the ingredients, cover and allow them to macerate until cool; strain and add the sugar and after dissolving by agitation add enough oil of wintergreen to flavor.

A safe and good remedy for constipation, biliousness, headache, indigestion, etc.
Dose—one to four teaspoonfuls.

**CHAMBERLAIN'S COLIC, CHOLERA, AND DIARRHEA
REMEDY.**

Tincture guaiacum	12 fl. dr.
Tincture camphor	16 fl. dr.
Tincture capsicum	20 fl. dr.

The dose is from one to fifteen drops on a lump of sugar every one-half to two hours until relief is obtained.

CHAMBERLAIN'S RELIEF.

Tincture capsicum	1 oz.
Tincture guaiac	$\frac{1}{4}$ oz.
Spirits of camphor	$\frac{3}{4}$ oz.
Color tincture, to make	2 oz.

The dose is from five to fifteen drops on a lump of sugar every one-half to two hours until relief is obtained.

CUTICURA OINTMENT.

The base is petroleum jelly. Nine drops of carbolic acid are added to this and the whole is colored green and perfumed with oil of bergamot.

CUTICURA RESOLVENT.

Aloes, Socot.	1 dr.
Iodide potass.	36 gr.
Powdered rhubarb	1 dr.
Whiskey	1 pt.

Allow these to macerate over night and then filter.

A tonic alternative in so-called diseases of the blood, pimples, ulcers, etc. The dose is a dessert spoonful two or three times a day.

COKE DANDRUFF CURE.

Resorcin	4 dr.
Alcohol	4 oz.
Water	4 oz.

Mix all together and add a few drops of perfume or bay rum. This may be colored if desired. An application should be made two or three times a week. Rub lightly into the scalp and continue the rubbing for some time.

CAMPBOR ICE.

Gum camphor	1 $\frac{1}{2}$ oz.
Spermaceti	3 oz.
Oil of sweet almonds	4 teaspoonfuls.

Heat this in an earthen vessel just enough to dissolve. Pour into moulds and wrap with tinfoil. Used for chapped hands and lips.

ELY'S CREAM BALM.

Vaseline	1 oz.
Carb. bismuth	15 gr.
Thymol	3 gr.
Oil wintergreen	2 minims.

Mix thoroughly. Used for catarrh. Dip the finger into the ointment, insert up the nostrils and give two or three inhalations.

EGYPTIAN EYE SALVE.

White Rosin	6 dr.
Beeswax	30 gr.
Burgundy pitch	30 gr.
Mutton tallow	30 gr.
Balsam fir	30 gr.
Venice turpentine	30 gr.

Melt together with gentle heat and stir until cold. Spread on a cloth and apply to the parts.

ESPEY'S CREAM.

Boric Acid	4 gr.
Cydonium	1½ dr.
Glycerine	2 oz.
Carbolic acid	10 gr.
Alcohol	3 oz.
Cologne water	2 dr.
Rose water	sufficient to make 1 pt.

Dissolve the boric acid in four ounces of rose water, add the cydonium and allow it to macerate in the solution for three hours, press through cloth and then add the glycerine, alcohol, cologne and enough rose water to make a pint. Add the carbolic acid and shake well.

FROSTILLA.

Quince seeds	30 gr.
Hot water	10½ oz.
Glycerine	3 oz.
Deodorized alcohol	2½ oz.

Put the seeds into a bottle, pour the hot water over them and shake occasionally until a mucilage is formed, then strain through muslin. Add the glycerine and shake well. Dissolve any desired perfume in the alcohol and add to the mucilage and shake briskly until the solution is of a uniform consistency.

GARGLING OIL.

Crude petroleum	6½ fl. oz.
Soft soap	8 fl. oz.
Ammonia water	3 fl. oz.
Benzine	8 fl. oz.
Crude oil amber	1 fl. oz.
Tincture iodine	½ fl. oz.
Water	2½ pts.

First, mix the petroleum and soap and then add the ammonia water, oil of amber and tincture of iodine, and mix well. Then add the benzine and lastly the water. An excellent liniment for sprains, strains, rheumatism, sciatica, etc.

GENUINE WHITE OIL LINIMENT.

Ammonia carbonate	19 parts.
Camphor	20 parts.
Oil origanum	20 parts.
Oil turpentine	21 parts.
Castile Soap	19 parts.
Water	sufficient to make 300 parts (by weight).

GILES'S IODIDE OF AMMONIA LINIMENT.

Iodine	1 dr.
Camphor	1 oz.
Oil of lavender	$\frac{1}{2}$ oz.
Oil of rosemary	$\frac{1}{2}$ oz.
Aqua ammonia	4 oz.
Alcohol	1 qt.

First, dissolve the iodine in the alcohol; add the camphor and then the oils and then add enough water of ammonia to remove the dark color from the mixture.

GOMBAULT'S CAUSTIC BALSAM.

Cotton-seed oil	2 fl. oz.
Croton oil	4 fl. dr.
Oil of camphor	1 fl. dr.
Oil of thyme	$\frac{1}{2}$ fl. dr.
Oil of turpentine	2 fl. dr.
Kerosene	4 fl. dr.
Sulphuric acid	20 minims.

Mix the cotton-seed and croton oils and add the sulphuric acid, stirring continually, then add the other ingredients. After standing a few days this closely resembles the original preparation.

An excellent preparation for spavins, ringbones, sprains and swellings.

GOOD SAMARITAN LINIMENT.

Oil of hemlock	$\frac{1}{2}$ fl. oz.
Oil of sassafras	$\frac{1}{2}$ fl. oz.
Spirits of turpentine	$\frac{1}{2}$ fl. oz.
Tincture of opium	$\frac{1}{2}$ fl. oz.
Tincture of capsicum	$\frac{1}{2}$ fl. oz.
Tincture of myrrh	2 fl. oz.
Oil of origanum	1 fl. oz.
Oil of wintergreen	3 fl. dr.
Gum camphor	1 oz. (troy)
Chloroform	$\frac{3}{4}$ fl. oz.
Alcohol	2 pts.

GREEN MOUNTAIN SALVE.

Resin	5 lb.
Beeswax	$\frac{1}{4}$ lb.
Burgundy pitch	$\frac{1}{4}$ lb.
Mutton tallow	$\frac{1}{4}$ lb.
Oil of hemlock	1 oz.
Balsam fir	1 oz.
Oil of red cedar	1 oz.
Oil of origanum	1 oz.
Venice turpentine	1 oz.
Oil of wormwood	$\frac{1}{2}$ oz.
Powdered verdigris	1 oz.

Melt together the resin, beeswax, pitch and tallow and then add the oils; having rubbed up the verdigris with a little oil, add it to the other articles, stirring well; then put the whole into cold water and work until cold enough to roll into sticks.

GREAT LONDON LINIMENT.

Acetate of morphia	10 gr.
Olive oil	1 oz.
Chloroform	1 oz.
Water of ammonia	1 oz.

This is used where there is great pain. It should be used with caution.

GREENE'S NERVURA.

Tinct. of cinchona	5 oz.
Tinct. of damiana	5 oz.
Tinct. of coca	5 oz.

Make the tincture of damiana by taking five ounces of the leaves and a pint of diluted alcohol. Put into a wide mouthed bottle, place in a water bath and boil for half an hour. Filter and to the filtered product add enough diluted alcohol to make a pint. Prepare the tincture of coca in the same way.

A good nerve tonic. Dose for adults—one teaspoonful three times a day.

GREEN'S AUGUST FLOWER.

Golden seal	90 gr.
Rhubarb	360 gr.
Cape aloes	16 gr.
Carb. of potash	120 gr.
Peppermint leaves	120 gr.
Capsicum	5 gr.
Sugar	5 oz.
Water	10 oz.
Alcohol	3 oz.
Essence of peppermint	20 minims.

The drugs should be powdered and macerated with the mixed water and alcohol for seven days. Filter and add enough diluted alcohol to make the filtered product measure one pint.

An excellent remedy for sour stomach, indigestion, flatulence, biliousness, headache and other troubles arising from a disordered stomach. Dose—one teaspoonful three times a day.

GOLD CURE FOR DRUNKENNESS.

We give two systems—The Wherrell Treatment and The Keeley Cure.

The Wherrell Treatment.—

Tincture of quassia	1 oz.
Compound tincture of cinchona	1 oz.
Tincture of hydrastis	1 oz.

Mix and take a teaspoonful in water every three hours.

The Keeley Cure.—

Tincture of gentian	1 oz.
Tincture of cinchona	1 oz.
Tincture of columbo	1 oz.
Salicin	1 dram.

The salicin should be dissolved in two ounces of boiling water and added to the tinctures. Take a teaspoonful every two hours for four or five weeks.

HALL'S CATARRH CURE.

Gentian root in coarse powder	1¼ oz.
Cardamon seeds in coarse powder	100 gr.
Bitter orange peel in coarse powder	5 dr.
Potassium iodide	1 oz.
Dilute alcohol	sufficient quantity.

Macerate the crude drugs in 12 ounces of dilute alcohol for 48 hours, then put into a percolator and allow to percolate slowly. When the liquid has stopped percolating, pass enough menstruum through the percolator so that the finished product measures a pint. In this dissolve the potassium iodide.

The dose is a dessert spoonful three times a day after meals.

HAMBURG TEA.

Coriander	1 part.
Manna	3 parts.
Senna	8 parts.

Used for constipation, headache, biliousness, etc. Mix a teaspoonful with a cup of boiling water and allow to cool before drinking.

HALL'S HAIR RENEWER.

Lead acetate	1/2 dr.
Precipitated sulphur	1/2 dr.
Salt	1 dr.
Glycerine	4 fl. oz.
Jamaica rum	2 fl. oz.
Bay rum	1 fl. oz.
Water	8 fl. oz.

Mix thoroughly. Shake well before using and rub into the roots of the hair once a day until the hair darkens and then once a week.

HAMLIN'S WIZARD OIL.

Alcohol	1 pt.
Gum camphor	1 oz.
Tincture myrrh	1/2 oz.
Tincture capsicum	1/2 oz.
Oil sassafras	1/2 oz.
Chloroform	1/2 oz.

An excellent liniment.

HARLEM OIL.

Flowers of sulphur	2 ounces.
Linseed oil	1 lb.
Oil of amber	2 oz.
Oil of turpentine	sufficient quantity.

Boil the linseed oil and sulphur gently until the sulphur is dissolved; then take from the fire, and when somewhat cooled, add the oil of amber and enough oil of turpentine to make the mixture of the consistency of molasses.

Used for kidney, urinary and bladder troubles and for backache, rheumatism, etc. The dose is from five to fifteen drops on sugar, three times a day.

HOSTETTER'S BITTERS.

Calamus root	1 lb.
Sugar	1 lb.
Orange peel	1 lb.
Gentian root	1 lb.
Peruvian bark	1 lb.
Columbo root	1 lb.
Rhubarb	4 oz.
Cinnamon	2 oz.
Cloves	1 oz.
Diluted alcohol	enough to make 2 gal.

Grind all the solids together to a coarse powder, macerate in one gallon of the alcohol, pack in percolator and add enough dilute alcohol to make two gallons. The dose is from one to two tablespoonfuls before meals.

HUNYADI JANOS WATER.

Sulphate of lime	3/4 oz.
Epsom salts	13 oz.
Glauber salts	12 oz.
Sulphate of potassa	1/2 dr.
Water	5 gal.

Mix the above ingredients together and charge with gas.

HANSON'S MAGIC CORN CURE.

Simple cerate	1 oz.
Salicylic acid	1 dr.

Mix thoroughly.

Apply to corn, covering with a piece of muslin.

HOLLOWAY'S OINTMENT.

White wax	10 parts.
Yellow wax	10 parts.
Turpentine	25 parts.
Lard	50 parts.
Sweet oil	75 parts.

Melt all together with gentle heat and stir until cold. An excellent family salve for sores of all kinds.

HOP BITTERS.

Tinct. hops	½ oz.
Tinct. senega	3 dr.
Tinct. buchu	3 dr.
Tinct. cochineal	20 drops.
Podophyllin (dissolved in spirits of wine)	10 gr.
Distilled water	to make 1 pint.

Dose—One teaspoonful three times a day before meals.

JAYNE'S EXPECTORANT.

Syrup squills	2 oz.
Tinct. tolu	1½ oz.
Tinct. digitalis	1 dr.
Tinct. camphor	1 dr.
Tinct. opium	2 dr.
Wine ipecac	2 dr.
Antimon. and pot. tart	2 gr.

Used for coughs, colds, bronchitis and inflammation of the air passages. Dose for adults—one teaspoonful every three hours.

KENDALL'S SPAVIN CURE.

Alcohol	2 fl. oz.
Turpentine	1 fl. oz.
Camphor	240 gr.
Petroleum oil (heavy)	½ fl. dr.
Iodine	25 gr.
Oil of rosemary	1 fl. dr.

Dissolve the camphor and the iodine in the mixed oils without filtering.

KOHLER'S ONE NIGHT CORN CURE.

This is said to consist of suet containing 25 per cent. of salicylic acid.

KEELEY CURE.

(See "Gold Cure.")

KING'S NEW DISCOVERY.

Carbonate of magnesia	¼ oz.
Sugar	14 oz.
Tinct. white pine	2 oz.
Fl. ex. ipecac	½ dr.
Water	7 oz.
Sulph. morphia	8 gr.
Chloroform	60 drops.

Rub the magnesia in a mortar with one ounce of sugar, and triturate with the fluid extract of ipecac and the tinct. of white pine; gradually add the water and triturate with the mixture in the water. Filter and dissolve the sulph. morphia in the filtrate; mix the chloroform with the rest of the sugar in a bottle and add the liquid above. Keep tightly corked.

Used for coughs, colds, bronchitis and inflammation of the air passages. Dose for adults—one teaspoonful every four hours.

KENNEDY'S MEDICAL DISCOVERY.

Take—

Sneezewort	½ oz.
Bitter-root	2 dr.

Mix and add—

Boiling water	4 fl. oz.
Proof spirits	5 fl. oz.
Licorice root	2 dr.

Macerate for 48 hours and add—

White sugar	2 oz.
Tinct. gaultheria	½ oz.

A general family medicine. The dose is a teaspoonful four times a day.

KICKAPOO INDIAN OIL.

Camphor	½ oz. (troy)
Oil turpentine	1 fl. dr.
Oil wintergreen	½ fl. dr.
Oil peppermint	½ fl. dr.
Tinct. capsicum	½ fl. oz.
Alcohol, sufficient to make	1 pt.

An excellent liniment for rheumatism, pains in the back or chest, etc.

LINIMENT FOR MAN AND BEAST.

Powdered aloes	1 oz.
Powdered myrrh	1 oz.
Balsam fir	1 oz. (troy)
Alcohol	8 fl. oz.

The dose is from ten to twenty drops on sugar, three times a day.

LYON'S KATHAIRON.

Tinct. cantharides	1 fl. dr.
Castor oil	1 fl. oz.
Stronger water of ammonia	1 drop.
Oil of bergamot	20 minims.
Alcohol, sufficient to make	3 fl. oz.

Brush vigorously into the scalp.

LAXATIVE BROMO-QUININE TABLETS.

Podophyllin	1/9 gr.
Aloin	1/9 gr.
Sodium bicarbonate	1 gr.
Quinine sulphate	1 gr.
Acetanilide	2 gr.

Used for chills, colds, coughs, grippe, etc. The dose is two tablets every two hours until the bowels move freely and then one three times a day.

LYDIA PINKHAM'S VEGETABLE COMPOUND.

Partridge-berry vine	1 lb.
Cramp bark	1 lb.
Poplar bark	½ lb.
Cassia	½ lb.
Unicorn root	½ lb.
Beth root	6 oz.
Sugar	6 lb.
Alcohol	½ gal.

Water, a sufficient quantity.

Reduce the first six ingredients to No. 40 powder, cover with boiling water, let stand until cold, and percolate with water until 2½ gallons of liquid are obtained. To this liquor add the sugar, bring to a boil, remove from the fire, strain and when cold add the alcohol.

Used for female troubles. The dose is a teaspoonful three or four times a day.

MADAM RUPPERT'S FACE BLEACH.

Corrosive sublimate	1 gr.
Tincture of benzoin	7 gr.
Water	500 grs.

Mix and apply to the face at night for two nights and then once a week.

MICAJAH'S MEDICATED UTERINE WAFERS.

Mercury bichloride	$\frac{1}{16}$ gr.
Bismuth subnitrate	15 gr.
Zinc sulphate	5 gr.
Acacia	5 gr.
Carbolic acid	$\frac{1}{2}$ gr.
Water, a sufficient quantity.	3 gr.

Use enough water to make into a mass. Used for leucorrhea, (whites), gonorrhea and similiar discharges.

MAGNETIC LINIMENT.

Oil of origanum	1 oz.
Tinct. cantharides	2 dr.
Muriate ammonia	2 dr.
Sulphuric ether	1 oz.
Alcohol	1 pt.

This is a rubefacient liniment acting as a counter irritant in inflammations.

MALVINA CREAM.

Spermaceti	30 gr.
White wax	50 gr.
Saxoline (petrolatum)	265 gr.
Bismuth oxychloride	40 gr.
Mercuric chloride	$\frac{1}{2}$ gr.
Spirit of rose (4 drams of oil to 1 pint)	20 minims.
Oil of bitter almonds	1 minim.

Melt the white wax, saxoline, and spermaceti together and while cooling incorporate the bismuth oxychloride and the mercuric chloride, the latter having been previously dissolved in a little alcohol and, when nearly cold, stir in the perfumes.

A good cosmetic for freckles, sunburn, tan, etc.

MALVINA LOTION.

Rose water	1 pint.
Oil of almonds	2 dr.
Gum arabic, good quality (dissolved in a little of the rose water)	4 dr.
Corrosive sublimate	2 gr.
Oxide of zinc	3 dr.

Use the lotion in connection with the Malvina Cream. For freckles, pimples, liver mole, moth patches, salt rheum and ringworm.

MEXICAN MUSTANG LINIMENT.

Oil of thyme	$\frac{1}{2}$ dr.
Oil of turpentine	$\frac{1}{2}$ dr.
Oil of amber, crude	$\frac{1}{2}$ dr.
Kerosene oil	3 dr.
Black oil	1 dr.
Water	3 oz. 2 dr.
Soap	35 gr.
Caustic potash	3 gr.

"The soap should be placed, together with the alkali, in a flask, and then dissolved in two ounces of hot water; add the mixed oils in very small quantities at a time, with vigorous shaking. When the mixture has once assumed a creamy consistency, the oils may be added more rapidly; but in any case, reasonable care should be observed, and this is true in adding more water, which should be quite warm, until the full pint is made. If the oils do not emulsify readily, it is necessary to begin over again, as either too much oil was added at first, or the water was not warm enough. Strict attention must be paid to both of these considerations in order to insure success.

NERVE AND BONE LINIMENT.

Oil of rosemary	2 oz.
Oil of origanum	2 oz.
Oil of amber	2 oz.
Oil of hemlock	2 oz.
Turpentine	2 pts.
Linseed oil	3 pts.

For external use only.

Should be thoroughly mixed. Rub in well for rheumatism, gout, chilblains, sciatica, lumbago, etc.

OIL OF JOY.

Alcohol	4 pts.
Gum camphor	$\frac{1}{2}$ oz.
Oil of cedar	1 oz.
Oil of sassafras	1 oz.
Tinct. gualac	1 oz.
Tinct. capsicum	2 oz.
Water of ammonia	4 oz.
Chloroform	3 oz.

Mix well, shake before using and apply to parts affected with vigorous rubbing.

Used for sprains, strains, rheumatism and pains in the back and chest.

OIL OF GLADNESS.

Oil of peppermint	1 fl. dr.
Oil of horsemint	1 fl. dr.
Oil of marjoram	1 fl. dr.
Ether	2 fl. dr.
Tinct. capsicum	4 fl. dr.
Tinct. of red sanders	1 fl. dr.
Tinct. of opium	1 fl. dr.
Alcohol, sufficient to make	8 fl. oz.

Mix thoroughly. Shake before using, and apply to the affected parts, rubbing vigorously. Used for rheumatism, pains in chest and back, sprains, strains, etc.

ORANGE BLOSSOM.

The constituents of this vaginal suppository are:

Alum	15 gr.
Zinc sulphate	1 dr.
Cocoa butter	3 dr.
White wax	$\frac{1}{2}$ dr.
Oil sweet almonds	$1\frac{1}{2}$ dr.
Ext. henbane	1 gr.

Grind the ingredients well together in a mortar until a pasty mass is formed and then make into a vaginal suppository. Used for gonorrhea and leucorrhea.

PETTIT'S EYE SALVE.

Olive oil	4 dr.
White wax	$\frac{1}{2}$ dr.
Spermaceti	$1\frac{1}{2}$ dr.

Melt together and add gradually, under trituration in a warm mortar, to the following in fine powder, and mix thoroughly:

Oxide zinc	30 gr.
White precipitate	20 gr.
Morphine sulph.	$\frac{3}{4}$ gr.
Acid benzoic	2 gr.
Oil rosemary	$\frac{1}{2}$ gr.

Finally stir until cool, and keep in a well covered vessel.

Used for granulated eyelids, inflammation of the lids, etc. Apply to the eyelids before retiring.

PERUNA.

Cubebs	1 dr.
Copaiba	3 dr.
Calisaya bark, ground	1 oz.
Turkey corn, ground	1 oz.
Stone root, ground	1 oz.
Deodorized alcohol	1/2 pt.
Water	1 pint.

Add all the ingredients to the alcohol and let stand for a week, shaking the bottle frequently, and finally filter through filter paper or strain through several thicknesses of muslin. Sweeten and flavor to taste.

PINK PILLS FOR PALE PEOPLE.

Pure sulphate of iron	1/2 oz.
Sugar	24 gr.
Tragacanth, in fine powder	8 gr.
Carbonate of potash	70 gr.
Glycerine	5 drops.
Water	sufficient to make a mass.

Mix well and make into 75 pills and coat with colored sugar.

Used for anemia, lassitude, lack of interest in life, sallowness or paleness, etc. The dose for adults is one or two pills three times a day.

PERRY DAVIS'S PAIN KILLER.

Capsicum	10 oz.
Gum myrrh	2 1/4 lb.
Gum benzoin	6 oz.
Gum opium	8 oz.
Gum camphor	10 oz.
Gum guaiac	3 oz.
Alcohol	5 gal.

This is an excellent remedy for diarrhea, colic, wind in the bowels, pains in the stomach, etc. The dose for adults is from fifteen to thirty drops.

PAGE'S LIQUID GLUE.

Acetic acid	10 parts.
Best carpenter's glue	120 parts.
Water	130 parts.
Alum	1 part.
Digest in water until dissolved and when cold add	
Alcohol	30 parts.

PIERCE'S FAVORITE PRESCRIPTION.

Cinchona	150 gr.
Savin	150 gr.
Agaric	75 gr.
Cinnamon	75 gr.
Water, enough to make a decoction of	8 fl. oz.
Add—	
Acacia	150 gr.
Sugar	75 gr.
Tinct. digitalis	1/2 fl. dr.
Opium	1/2 fl. dr.
Oil anise	8 drops.

Dissolve the gum and sugar in the strained decoction and add two fluid ounces of alcohol in which the oil has previously been dissolved.

Used for chronic weakness and other complaints of females. The dose is a teaspoonful three times a day.

PISO'S CURE FOR CONSUMPTION.

Tinc. tolu	½ oz.
Fl. ext. cannabis indica	2 dr.
Fl. ext. lobelia	2 dr.
Chloroform	1 dr.
Tartar emetic	4 gr.
Sulph. morphia	4 gr.
Ess. mentha viridis	10 drops.
Water	8 oz.
Sugar	14 oz.

Mix the fluid extracts, chloroform, tinct. of tolu and essence of spearmint, and shake in a bottle with the sugar. Dissolve the morphine and tartar emetic in hot water, then add the water to the sugar in a bottle.

Dose.—A teaspoonful.

Used for coughs, colds, grippe, asthma, bronchitis and irritation of the air passages.

PAINE'S CELERY COMPOUND.

Celery seed	2 oz.
Red cinchona	1 oz.
Lemon peel	¼ oz.
Orange peel	¼ oz.
Coriander seed	¼ oz.
Hydrochloric acid	15 minims.
Glycerine	3 fl. oz.
Alcohol	5 fl. oz.
Water	4 fl. oz.
Syrup	4 fl. oz.

Grind the solids to No. 40 powder, mix the water and acid, add the alcohol and glycerine, and in the menstruum so prepared macerate the powder for twenty-four hours; then percolate, adding enough water and alcohol in the proportion given to make 12 fluid ounces. Finally add the syrup and, if necessary, filter.

An excellent tonic and stomachic useful in indigestion. The dose for adults is a teaspoonful three times a day.

RADWAY'S READY RELIEF.

Soap liniment	3 oz.
Water of ammonia	1 oz.
Tinct. capsicum	1 oz.
Alcohol	1 oz.

This should be thoroughly mixed and rubbed well into the affected parts. It is a counter irritant.

RADWAY'S PILLS.

Aloes	4 parts.
Ginger	2 parts.
Jalap	2 parts.
Myrrh	2 parts.

Make into a mass with mucilage and divide into 2-grain pills.

Used for biliousness, constipation and disordered stomach. The dose for adults is from one to three pills at bed time.

ROYAL CATARRH CURE.

Common salt	98 parts.
Carbolic acid	1.35 parts.
Muriate of berberine .....	.63 parts.
Total parts by weight	100 parts.

Mix together A teaspoonful is to be dissolved in a glass of water three or four times a day and used by douching or snuffing up the nose.

SEIDLITZ POWDERS.

Bicarbonate of soda	2 scruples.
Rochelle salts	2 drams.
Tartaric acid	35 grains.

Mix the soda and salts together and put in a blue paper and put the tartaric acid in a white paper. Put the contents of the blue paper into half a glass of water and then add the contents of the white paper and drink at once while it is effervescing. If desired, a little loaf sugar may be added.

This is a cooling laxative and useful in fevers.

SEVEN BARKS.

Extract of poke root	12 lb.
Extract of hydrangea	1 lb.
Extract of Culver's root	12 lb.
Extract of lady's slipper	12 lb.
Extract of dandelion	12 lb.
Extract of colocynth	12 lb.
Extract of blue flag	6 lb.
Extract of bloodroot	6 lb.
Extract of stoneroot	6¾ lb.
Extract of golden seal	7½ lb.
Extract of mandrake	24 lb.
Extract of black cohosh	24 lb.
Extract of butternut	48 lb.
Spirits of sea salt	14½ lb.
Aloes	10 lb.
Infusion of capsicum	4½ lb.
Borate of sodium	15 lb.
Powdered sassafras	11 lb.
Ginger	6 lb.
Sugar-house syrup	40 gal.
Water, enough to make	98 gal.

This is a good liver and stomach tonic. The dose is a dessert spoonful before meals.

SHILOH'S CONSUMPTION CURE.

Muriatic acid	3 minims.
Muriate of morphine	3 gr.
Fl. ext. of ginger	3 fl. dr.
Fl. ext. wild cherry	3 fl. dr.
Fl. ext. henbane	2 fl. dr.
Diluted alcohol	3 fl. dr.
Chloroform	1 fl. dr.
Essence peppermint	30 minims.
Syrup of tar	3 fl. oz.
Simple syrup, sufficient to make	8 fl. oz.

Used for colds, coughs, bronchitis, asthma and irritation of the throat. The dose for adults is a teaspoonful.

"SUN" CHOLERA CURE.

Tinct. of opium	1 oz.
Tinct. of capsicum	1 oz.
Powdered rhubarb	1 oz.
Essence of peppermint	1 oz.
Spirits of camphor	1 oz.

The dose is from 15 to 30 drops in a wine-glassful of water.

Used for colic, diarrhea and pain in the stomach and bowels.

SKINNER'S DANDRUFF MIXTURE.

Chloral hydrate	1 oz.
Glycerine	4 oz.
Bay rum	16 oz.

Apply to the scalp once a day, rubbing in thoroughly.

SAGE'S CATARRH REMEDY.

Powdered hydrastis canadensis	1 oz.
Powdered borax	10 gr.
Salt	10 gr.
Ferro-cyanuret of iron	enough to color.

Mix thoroughly. A teaspoonful is to be stirred into a glass of water and used three or four times a day by douching or snuffing up the nose.

SEVEN SUTHERLAND SISTERS' HAIR GROWER.

Dist. ext. of witch-hazel	9 fl. oz.
Stearns's bay rum	7 fl. oz.
Common salt	1 dr.
Hydrochloric acid (5 per cent.)	1 drop.
Magnesia	sufficient.

Mix the distilled extract of witch-hazel and bay rum, and shake with a little magnesia; filter and in the filtrate dissolve the salt and add the hydrochloric acid. The agitation with magnesia causes the preparation to assume a yellow color but by rendering it very slightly acid, with the drop of hydrochloric acid of the strength given, this color disappears.

Rub well into the roots of the hair and brush vigorously.

ST. JACOB'S OIL.

Chloral hydrate	1 oz.
Gum camphor	1 oz.
Sulph. ether	1 oz.
Chloroform	1 oz.
Tinct. opium	$\frac{1}{2}$ oz.
Oil sassafras	$\frac{1}{2}$ oz.
Oil origanum	$\frac{1}{2}$ oz.
Alcohol	$\frac{1}{2}$ gal.

An excellent liniment for strains and pains. Rub well into the affected parts and cover with a piece of linen.

ST. JOHN'S LINIMENT.

Sweet oil	3 oz.
Turpentine	7 oz.
Tinct. arnica	4 oz.
Oil hemlock	1 oz.
Oil origanum	1 oz.
Oil juniper	1 oz.
Oil amber	2 oz.
Laudanum	2 oz.
Spirits ammonia	$\frac{1}{2}$ oz.
Camphor	$\frac{1}{2}$ oz.

Mix and shake well before using. Used for rheumatic pains, neuralgia, lumbago and sciatica.

SYRUP OF FIGS.

Coriander seed	6 oz.
Senna leaves	14 oz.
Figs	24 oz.
Cassia pulp	18 oz.
Tamarind	18 oz.
Prunes	12 oz.
Ext. licorice	$1\frac{1}{2}$ oz.
Ess. peppermint	$1\frac{1}{2}$ oz.
Simple Syrup	1 gal.

Make a water extract of the drugs so as to measure about four pints, and in this dissolve eight pounds of sugar to make the syrup.

Used for constipation, sour stomach, bilious headache, etc. The dose for adults is from one to two teaspoonfuls every three hours until the bowels move.

SMITH BROS. COUGH DROPS.

Average weight of each drop about	36.5 gr.
Sugar (and small quantity of glucose)	35.5 gr.
Powdered charcoal .....	.80 gr.

A small quantity of licorice is added and they are flavored with oil of sassafras and a little oil of anise.

SWIFT'S SYPHILITIC SPECIFIC.

Old man's gray-beard root (<i>chionanthus virginica</i>)	1 bushel.
Prickly-ash root	16 oz.
Red sumac root	8 oz.
White sumac root	8 oz.
Sarsaparilla root	10 oz.
Sulphate of copper	8 dr.

"Bruise the gray-beard and sumac roots, and put them with the sarsaparilla into an iron pot sufficient to hold eight gallons of water, or cover the roots completely with the water. Cover the pot with pine tops, and boil slowly until the liquid assumes the color of ink. Strain while warm, add the sulphate of copper and good Holland gin sufficient to prevent fermentation.

Dose.—One wine-glassful four times a day. Strictly abstain from horseback riding, butter or very greasy food, all kinds of spirits or fermented liquors. Of course the chancre must be treated in the usual manner.

THOMPSON'S EYE-WATER.

Copper sulphate	5 gr.
Zinc sulphate	20 gr.
Tinct. camphor	1 dr.
Tinct. saffron .....	.2 dr.
Rose water	8 oz.
Dist. water	8 oz.

Mix and filter.

Used for irritated or inflamed conditions of the eyes and lids. Drop a few drops into the eye.

TRASK'S MAGNETIC OINTMENT.

Lard	2 oz.
Raisins	2 oz.
Fine cut tobacco	2 oz.

Simmer together, strain and press out all from the drugs. Used for skin diseases such as tetter and salt rheum.

VAN BUSKIRK'S FRAGRANT SOZODONT.

Alcohol	1 fl. oz.
Water	1¼ fl. oz.
Soap	120 gr.
Oil of wintergreen	2 minims.
Red sanders	sufficient.

"Dissolve the soap in the mixture of alcohol and water; add the color; perfume with oil of wintergreen; add enough water to make the fluid measure three ounces. The following is suggested as a similar article to the Fragrant Sozodont Powder, which accompanies the liquid."

Precipitated chalk	200 gr.
Orris root	125 gr.
Infusorial earth	40 gr.

Perfume lightly with oil of cloves.

WHERRELL TREATMENT.

(See "Gold Cure.")

WARNER'S SAFE CURE.

Ext. of hepatica (the herb)	232 gr.
Ext. of lycopus virg. (the herb)	308 gr.
Ext. of gaultheria	7½ gr.
Potassium nitrate	39 gr.
Alcohol (90 deg.)	2½ oz.
Glycerine	10 dr.

Water, sufficient to make 1 pint.

This is a stimulant to the urinary organs and is used for kidney and bladder troubles. The dose is a dessert spoonful three times a day.

HERB DEPARTMENT.

Gathering and Drying Herbs.—Roots ought to be dug in the fall after the roots and leaves are dead or have come to maturity; or, they should be dug before they start in the spring. They ought to be washed immediately after they are dug, or not washed at all. Some roots are injured by being put into water, especially those of an aromatic nature. All roots, when cleaned, ought to be put in a place where they will dry soon. They should not be placed in the sun but in a dry apartment where they will be placed under the influence of fire heat, as on an upper floor while fire is kept below. As soon as they are perfectly dry they ought to be packed away and kept from the air as much as possible.

HOW HERBS ARE MADE INTO MEDICINES.

Teas or Infusions.—These are made by pouring boiling water on the plant or bark and allowing it to steep for a short time until the water cools, after which the liquid is strained. Sometimes cold water is used. Infusions are made by steeping like tea. The infusion is generally better than the decoction as boiling destroys the virtue of some herbs. Usually, from 1 to 4 ounces of the herb should be used to a pint of boiling water.

Decoctions.—A decoction is a solution made by boiling the herb in water and straining while hot. Decoctions are made by boiling like coffee.

Cerates.—Cerates are ointments containing 30 parts of beeswax to 70 parts of lanolin or some other substance to make them harder for use. They are used for piles, etc. Cerates are used where you do not desire a quick dissolving of the lanolin or other base.

Ointments.—Ointments are made without beeswax and are softer than cerates and are good for local application. The base is vaseline or cosmoline. They are made with some kind of fatty substance like vaseline or lanolin (sheep's oil). The medicine is rubbed into the base. Ointments dissolve readily.

Extracts.—Extracts are made by taking the soluble parts from the plant. This is done by allowing them to stand in water or alcohol. Extracts consist of the soluble parts of plants reduced to a semi-solid condition by evaporation.

Fluid Extracts.—These are made in the same way as solid extracts except that they are not so completely evaporated.

Syrups.—These are solutions of sugar in water or sometimes in gummy substances. To make a syrup of plants, add simple syrup to the infusion when hot and somewhat evaporated and then bottle while hot. In other words, first make a tea of the plant and then add sugar.

Powders.—Barks or dried herbs are finely broken up or pulverized to make powders.

Tinctures.—Tinctures are solutions of the medical properties of herbs in alcohol or in mixtures of alcohol and water. Take the fresh or dried herb, chop and pound, and to 1 ounce of the herb add 2 ounces of water and 2 ounces

of alcohol. Allow the mixture to stand in a bottle from 8 to 10 days in a cool place. Then turn off the liquid carefully and bottle for use.

Fomentations.—These are plants applied locally in infusion or decoction. Put the herbs into a bag and steep and then wring the bag out of the liquid and apply hot. This will hold heat longer than cloths. Fomentations are bags of herbs wrung out of hot herb teas and applied to the affected parts.

Liniments.—These are made with oily substances often mixed with powerful drugs.

Suppositories.—These are small masses made into a cone shape. The medicine is usually mixed with cocoa butter and they are designed for use in the rectum or vagina.

HERB REMEDIES.

Including Many Valuable Indian Remedies.

ASPARAGUS.

(*Asparagus Officinalis*.)

Action.—Diuretic, Heart Sedative.

Uses.—Stone or Gravel in Kidneys or Bladder, Dropsy.

This is a common garden vegetable and may be used either as a tea or in decoction by using 2 ounces of the plant to a pint of water. In decoction it is used freely as a diuretic. Another way to prepare the plant is to crush and strain 5 pounds of the fresh tops in water, boil the juice down to a pint and add a pint of rectified spirits. Take from $\frac{1}{2}$ to 1 teaspoonful 5 times a day. Asparagus tea is good for dropsy and is particularly good for stone or gravel in the kidneys or bladder. In making the tea keep the roots in hot water, not boiling, for several hours and then strain. This must be taken for some time to get the desired results.

ARNICA.

Leopard's Bane—(*Arnica Montana*).

Action.—Internally it is an Emetic and Cathartic.

Uses.—Bruises, Strains, Aches, Muscular Rheumatism.

This is a horizontal, woody, blackish root, terminating abruptly at the lower end. The stem rises about a foot high and terminates in 1, 2 or 3 upright peduncles, each bearing one very large flower of a deep yellow color and somewhat mixed with brown. The flowers are disk shaped with rays; are of feeble aromatic odor; and are of a bitter, unpleasant taste. The flowers and roots are the parts used. Grows in Europe and Siberia and in the West and North Western United States. Can be bought in drug stores. It is used externally and is splendid for bruises, strains, aching of the muscles and muscular rheumatism.

It is used in infusion, tincture and fluid extract. Wring cloths out of hot arnica tea and apply for bruises and strains. You can add wormwood and smartweed if you wish. You can also use the tincture of arnica for rheumatism, tired muscles, sprains and bruises. Use 1 dram to a pint of water. The following are good prescriptions in which arnica is used. For boils and abscesses use 1 ounce each of either fluid extract or tincture of arnica,

soap liniment and laudanum. For rheumatism, sprains and painful joints apply locally when hot equal parts of fluid extract of arnica and witch hazel.

To make the tea or infusion of arnica use a handful of the flowers or roots to a pint of boiling water. The dose of the tincture is from 5 to 10 drops and is usually given 4 times a day. Five drops may be used every 2 or 3 hours.

ARSE SMART.

Action.—Antiseptic, Astringent.

Uses.—Inflammations, Cold Swellings, Bruises, Gravel, Obstructed Urine, Coughs and Colds, Worms.

This valuable remedy grows everywhere in our country though few know its value. It is a powerful antiseptic, allays inflammation and disperses cold swellings, particularly such as affect the knee joints. It dissolves congealed blood caused by bruises and blows. For this purpose it should be applied in strong decoction and poultices. It is also good for gravel and obstruction of the urine and for curing coughs and colds. It is also good for worms. The decoction is made by using 2 ounces of the plant to a pint of boiling water. The dose is from 1 to 2 ounces. Make the decoction strong for local application. The whole plant is used.

AVENS.

Aven's Root—Chocolate Root—Throat Root—(Geum Virginianum).

Action.—Tonic, Stomachic, Astringent.

Uses.—Bleeding, Chronic Diarrhea, Wind Colic, Stomach Affections, Asthma, Leucorrhea, Flooding, Sore Throat.

Grows about 2 feet high and has a perennial, small, brown, contorted, horizontal root. The stem is erect, simple or branched, and has but few flowers. The flowers are quite small, white, and grow on the ends of the stems. The fruit is a cluster of dry berries which are oval, brown and smooth. This plant is found in hedges and thickets in moist places in most parts of the United States. It flowers from June to August. It has long been used in domestic practice. The root is the part usually used. Tonic, astringent, stomachic. Used for passive and chronic bleeding, chronic diarrhea, wind colic, stomach affections, asthmatic symptoms and weakness, leucorrhea, flooding and sore throat. Must be used for some time and then it is a good builder and tonic. Make the decoction by using an ounce of the root to a pint of water and take 1 or 2 ounces or more 4 times a day. The dose of the powder is from 20 to 30 grains.

ALMOND. (Amygdala.)

Action.—Diuretic.

Uses.—Coughs, Hoarseness, Scalding of Urine, Kidney Troubles, To Whiten and Soften the Skin.

The oil of sweet almonds acts beneficially on the urinary organs and is good for scalding urine. Also good for hoarseness and tickling coughs and is frequently combined with other ingredients and used to soften and whiten the skin. From 1 to 8 drams is the dose of the oil of sweet almonds. The oil of bitter almonds is poisonous.

ARBOR VITÆ.

Uses.—Coughs, Rheumatism, Fevers, Ague, Scurvy.

This evergreen tree grows from 20 to 50 feet high and the branchlets are flat and spreading. Much used for hedges. Grows along banks of rivers and in low swampy places. An ointment made of the branchlets and cones is excellent for rheumatism. Make a poultice by powdering the cones and mixing with milk and it will cure the worst rheumatic pains. A decoction made of the branchlets or roots is good for coughs, ague, fevers and scurvy.

BALM OF GILEAD.

Balsam Poplar—(Populus Balsamifera).

Uses.—Cuts, Wounds, Coughs, Debility.

The buds of this tree contain medical properties and should be gathered in the fall. The buds are filled with a rich gum which is good for coughs and debility. Add 1 pint of fourth proof spirits to an ounce of the bruised buds. The dose of this is from a teaspoonful to a tablespoonful in sweetened water 3 or 4 times a day. This tincture is also fine when applied to cuts and wounds.

BETH ROOT.

Indian Balm—Birth Root—Ground Lily—Nodding Wake-Robin—Three Leaved Nightshade—Lamb's Quarter—(Trillium Pendulum).

Action.—Astringent, Tonic, Antiseptic.

Uses.—Bleeding from Lungs, Bloody Urine, Menorrhagia, Leucorrhea, Asthma, Difficult Breathing, Womb Troubles, Diarrhea, Tumors, Ulcers, Carbuncles, Buboës, Stings, Gangrene.

This plant has an oblong, tuberous root from which arises a slender stem from 10 to 15 inches high. It has 3 large leaves at the top of the stem, from between which appears a solitary flower, bell shaped and of a purple or white color. The root is of a brown color outside and white within. Common in the Middle and Western States. Grows in rich soils and in damp, rocky and shady woods. Flowers in May and June.

In its action it is astringent, tonic and antiseptic. It has been used very successfully in bleeding from the lungs, bloody urine, menorrhagia or uterine hemorrhage, leucorrhea, asthma and difficult breathing. The Indian women used it very much for womb troubles and in confinement to aid labor and for flooding. Its astringent action makes it good for hemorrhages. Boiled in milk, it is good for diarrhea and dysentery when used internally. The root may be made into a poultice and used for tumors, indolent and offensive ulcers, carbuncles, buboës, stings of insects and to restrain gangrene. The dose of the powdered root is 1 dram. A strong tea or infusion is made by adding from $\frac{1}{2}$ to 1 ounce to a pint of water. The dose is from 1 to 3 ounces. The tea is commonly used. This tea is also good for injections into the vagina for leucorrhea and flowing. When used as an injection the infusion may be made stronger by using more medicine to the pint of water.

BELLWORT.

Mohawk Weed—(Uvularia Perfoliata).

Action.—Tonic, Mucilaginous, Nervine.

Uses.—Wounds, Sores, Sore Mouth, Snake Bites, Sore Throat, Inflammation of Gums, Ulcers, Erysipelas, Inflammation of the Eyes, Sore Ears, Skin Affections.

This has a creeping rootstock and a stem from 8 to 14 inches high, dividing at the top into two branches. Leaves are clasping, elliptical, rounded at the base, acute at apex, smooth, light gray underneath, from 2 to 3 inches long and $\frac{1}{3}$ inch wide. Flowers are solitary, pale yellow, about an inch long and hang from the end of one of the branches. Bellwort is a smooth handsome plant common in the U. S. It grows in moist copses and woods and flowers in May. The root is the part used and when fresh is acrid and mucilaginous. It imparts its properties to water.

Its action is tonic, soothing and nervine. It was used by the Indians for wounds, sores and snake bites. Is very good for sore mouth, sore throat and inflammation of the gums. For bites of poisonous snakes make a decoction by boiling the root in milk and drink of this freely and to the wound apply a poultice of the root. The poultice is also good for general ulcers and wounds. A poultice of the green root or the dried root in powder and mixed with hot new milk is good in all stages of erysipelas and also for acute inflammation of the eyes. An ointment may be made by simmering the powdered root and green tops in lard for an hour over a slow fire and should be strained by pressing. This is useful for skin affections, sore ears, sore mouth, etc., of children. This ointment is also good for many cases of erysipelas.

BLUE BELLS.

Abscess Root—Greek Valerian—Sweat Root—(Polemonium Reptans).

Action.—Diaphoretic.

Uses.—Lung Troubles, Consumption, Liver Troubles, Boils, Scrofulous Complaints.

The roots are fibrous and grow from one head. The flowers, which are small and blue, appear early in the season and are followed by small seeds. Several stems sometimes arise from the same root. Grows a foot or two in height and is found in damp woods.

The Indians used it to produce sweating in fevers and pleurisies. It is used for scrofulous complaints, consumption and affections of the lungs and liver. The decoction is made by adding a small handful of the crushed roots to 3 pints of water and steeping down to half that quantity. The dose is half a teacupful every four hours. A tincture may be made in whiskey. Half a wineglassful taken 3 times a day will clean out the system and purify the blood and is good for one afflicted with boils.

BLUE CARDINAL FLOWER.

Blue Lobelia—(Lobelia Syphilitica).

Action.—Emetic, Cathartic.

Uses.—Blood Diseases, Kidney Troubles, Dropsy, Gonorrhea, Syphilis.

Same species as lobelia inflata. Grows throughout the U. S. in moist places. Bears a long spiked blue flower and yields a milky juice with a rank odor. Roots have white fibres. Used by Indians for blood diseases, etc. Also acts on the kidneys and produces more urine. Good for dropsy and gonorrhea. The root is the part used and the dose is from 20 to 60 grains of the powdered root 3 or 4 times a day. It can be combined in infusion with other blood remedies such as prickly ash, stillingia, red clover and sarsaparilla, and is then used for syphilis.

BLACK SNAKE ROOT.
(*Sanicula Marilandica.*)

Action.—Nervine, Tonic, Astringent.

Uses.—Rattle Snake Bites, Intermittent Fever, Sore Throat, Hives, Skin Diseases, St. Vitus' Dance, Diarrhea, Leucorrhea, Dysentery, Gonorrhea.

The stem is from 1 to 3 feet high. Leaves growing at the top of the long naked stem are from 3 to 5, parted in a whorl. Several stems rise from the same root. The flower stem rises considerably higher than the leaf stalks, with 2 or 3 small leaflets near the top. There are not many flowers and they are white and sometimes yellowish. The plant grows along roadsides and thickets and flowers in June. It is common in the U. S. and Canada.

In its action it is nervine, tonic and astringent. The Indians consider it a sovereign remedy for rattle snake bites. Take 3 bunches of roots and boil them in a pint of water and drink in divided doses at intervals of 20 or 30 minutes. At the same time prepare a decoction of the leaves and stems and bathe the bitten parts. The Indians claimed in this way to be able to cure this bite even if it happened two days previously. The plant is also good for intermittent fever, sore throat, hives and skin diseases. It may be used as a tea or the juice of the root may be swallowed. It is also good for St. Vitus' dance. For children from 8 to 10 years old the dose of the powdered root is $\frac{1}{2}$ dram 3 times a day. The decoction is good for diarrhea, leucorrhea, dysentery and gonorrhea. The decoction is made by using an ounce of the plant to a pint of water and the dose of this is from 2 to 4 ounces 3 or 4 times a day.

BALSAM FIR.
(*Terebinthina Canadensis.*)

Action.—Stimulant, Diuretic, Anthelmintic, Laxative, Antiseptic.

Uses.—Typhoid Fever, Capillary Bronchitis, Liniments, etc.

This tree is found in the U. S. and Canada. From this tree are obtained resin and turpentine, the uses of which are commonly known. The chief supply comes from the Carolinas. Turpentine is sometimes given internally for typhoid fever and capillary bronchitis. It is an effective stimulant and disinfectant. It is given in the form of emulsion and the dose is from 10 drops to 2 teaspoonfuls. The too liberal use of turpentine affects the kidneys.

BASSWOOD.

Linden Tree—Lime Tree—Tilia Tree—(Tilia Americana)—(Tilia Glabia).

Uses.—Vertigo, Headache, Spasmodic Cough, Epilepsy.

This is a very large and beautiful forest tree with broad leaves and yellowish-white flowers. The wood is soft and white and when dry floats on the water like cork.

Poultices are made from the leaves and bark and a tea is made of the flowers for headache, vertigo, spasmodic coughs, epilepsy and other complaints. This tea should be used in doses according to its effects.

BEECH.

Red Beech—(Fagus Ferruginea).

Uses.—Incontinence, Diabetes, Ulcers, Skin Diseases, Dyspeptic Troubles.

From the bark of this tree a decoction may be made for use in cases of incontinence of urine in children at night and for diabetes. A decoction

made from the leaves is valuable in the treatment of skin diseases, obstinate ulcers and dyspeptic troubles which are accompanied with low spirits, weakness and headache.

BROAD LEAVED DOCK.

Bitter Dock—Blunt-Leaved Dock—(Rumex Obtusifolius).

Action.—Alterative, Tonic.

Uses.—Bilious Diseases, Blood Diseases.

In growth this plant is similar to the narrow-leaved or yellow dock. The leaves are broad and spring from the stem the same as the narrow-leaved kind. The root is brown without and yellow within and is thick and branching. It grows to a height of about two feet and flowers a month later than the yellow dock. It is used for the same complaints as is the yellow dock.

BLUE VIOLET.

(*Viola Cucullata*.)

Action.—Demulcent, Expectorant, Laxative.

Uses.—Sore Throat, Constipation, Coughs, Eruptive Diseases.

This plant is well known, having blossoms of a blue-violet color and a root about an inch long. Grows on rich moist lands. A decoction made of this plant is valuable in the treatment of eruptive diseases of children and a syrup made of the petals is excellent for sore throat, coughs and constipation of children.

BUGLE WEED.

Water Bugle—Gypsywort—Water Horehound—(Lycopus Virginicus).

Uses.—Coughs, Bleeding from Lungs, First Stages of Consumption, Ill-conditioned Sores.

Grows in creeks, swamps, ditches, etc. The leaves grow two in a place and opposite each other on the stem. It blossoms from July to September and the flowers are white. A tea made from the stems and leaves may be drank freely. It is useful in the first stages of consumption, bleeding from the lungs and coughs. Persons with ill-conditioned sores should drink the tea and bathe the parts with it.

BUTTERNUT.

White Walnut—(Juglans Cineria).

Action.—Cathartic.

Uses.—Constipation.

This tree is common in the United States. An extract should be made of the inner bark which should be procured in May or June. The dose is from 15 to 30 grains. It is an effective cathartic and acts without causing heat or irritation and is not so likely to leave the bowels costive as many other cathartics.

BLACK COHOSH.

Squaw Root—Black Snake Root—Rattleweed—Richweed—(Cimicifuga Racemosa).

Action.—Tonic, Anti-spasmodic.

Uses.—Chorea, Convulsions, Epilepsy, Nervous Excitement, Asthma,

Whooping Cough, Delirium Tremens, Spasmodic Afflictions, Female Troubles, Coughs, Rheumatism, Neuralgia, Scrofula, Milk Leg.

This is a tall stately plant with a large blackish, perennial root having numerous long fibres. It has a simple smooth stem from 4 to 8 feet high and has but few leaves. The flowers are small, white and fetid and followed by shells producing seeds. The fruit is ovoid, dry, and with one cell. The smooth seeds are packed horizontally in two rows. It is a native of the United States and grows from Maine to Florida in shady and rocky woods and on rich grounds and hill sides. Flowers in June and July. The root is the part generally used and should be gathered early in autumn and dried in the shade.

This is a very active, powerful and useful remedy. It is good for the nervous system as in chorea, periodical convulsions, epilepsy, nervous excitement, asthma, whooping cough, delirium tremens and many spasmodic afflictions. For these troubles the powdered root should be taken in teaspoonful doses 3 times a day. In consumption, coughs, acute rheumatism, neuralgia, scrofula, milk leg, amenorrhea, dysmenorrhea, leucorrhea and other womb troubles the strong tincture is better than the powdered form. The Indian women used this plant very much in womb troubles for labor. In these troubles it may be used instead of ergot. Give $\frac{1}{2}$ dram of the powdered root every 15 or 20 minutes in warm water until expulsive action of the womb is produced. Or, $\frac{1}{2}$ dram of the saturated tincture may be used in the same way. After labor it is good for after-pains and nervous excitement. It is good for menstrual troubles; either too much or too little flow and painful menstruation. This medicine may be used as a decoction, tincture, fluid extract or in the powdered form. The tincture and fluid extract are the best forms. The dose of the tincture is 20 drops and of the fluid extract, half a dram. For whooping cough in a child a year old you can give 3 drops 4 or 5 times a day. This remedy is a grand one for women and is excellent for rheumatism and headaches caused by womb troubles. The decoction is made by using an ounce of the root to a pint of water and the dose is from $\frac{1}{2}$ to $1\frac{1}{2}$ ounces 3 or 4 times a day but the fluid extract or tincture is better and can be bought at any drug store. The following is good for pains and want of flow in monthly troubles. Take $1\frac{1}{2}$ ounces of fluid extract of black cohosh, 1 fluid dram of tincture of nux vomica and enough tincture of cinchona compound to make 5 fluid ounces. For pain in the ovaries, uterine neuralgia and amenorrhea give a teaspoonful or two of this mixture in water every 3 or 4 hours.

BLUE COHOSH.

Papoose Root—Blue Berry—Squaw Root—(*Caulophyllum Thalictroides*).

Action.—Diaphoretic Emmenagogue, Anti-spasmodic.

Uses.—Confinement, Menstrual Troubles, Rheumatism, Dropsy, Hysteria, Womb Troubles, Aphthous Sore Mouth and Throat.

This was also a great Indian remedy, especially for women before confinement and for menstrual troubles. This is a smooth plant, purple when young, with a high round stem 1 to 3 feet high, simple from matted root stocks and dividing above into two parts. The flowers appear in May and June and produce berries of a deep blue color, something like sour grapes. It grows all over the United States in low, moist, rich grounds near running streams, in swamps, and on islands that have been overflowed with

water. The seeds ripen the latter part of the summer and are said to be an excellent substitute for coffee when they have been washed. The root is the part used as a medicine. It is sweet, pungent and aromatic. The tea or tincture made from it is yellow.

It is used principally for monthly periods and has an anti-spasmodic action. It is also good for rheumatism of the small joints and especially when associated with womb troubles. Also used for dropsy, hysteria and chronic womb diseases. It excites a special influence on the womb and is good for leucorrhea, amenorrhea and dysmenorrhea. It is very good when used in decoction or infusion and an ounce of the plant should be used to a pint of boiling water. The dose of this is from 1 to 4 ounces 3 or 4 times a day and should be taken for several weeks before confinement. The dose of the tincture is from $\frac{1}{2}$ to 1 dram. In confinement it is good to hasten delivery when delay is due to debility or lack of uterine energy or is the result of fatigue. Combined with equal parts of golden seal, made into a tea, and sweetened with honey it is very good for apthous sore mouth and throat.

BARBERRY.

(*Berberis Vulgaris*.)

Action.—Tonic, Diuretic.

Uses.—Kidney Troubles, Urinary Troubles, Gravel.

This is a shrub which rises from 4 to 8 feet in height and has long bending branches and many thorns. It has egg-shaped leaves, yellow flowers and many oblong red berries which hang in loose bunches. Found on hills and mountains from Canada to Virginia. It flowers in April and May and ripens its fruit in June. The bark of the stem and root is the part used.

It is a tonic and diuretic and is especially good for kidney troubles, cloudy urine, diminished urine, pain in passing urine and pain in back and front. It is also good for gravel. The tea made from the bark is one of the best kidney remedies known and the dose is from 1 to 4 teaspoonfuls 4 times a day. The dose of the fluid extract is from 10 to 30 drops 3 or 4 times a day. The tea is made by using from 1 to 2 ounces of the bark to a pint of boiling water.

BAYBERRY.

Candle Berry—Wax Berry—Wax Myrtle—(*Myrica Cerifera*).

Action.—Carminative, Stomachic, Emmenagogue.

Uses.—Palsy, Colic, Hysterical Complaints, Scrofula, Diarrhea, Urinary Troubles, Jaundice, Kidney Troubles, Sore Throat, Leucorrhea.

This shrub rises 3 or 4 feet high and is scraggy with many branches. It grows near large bodies of water and especially along the Great Lakes. It is set full of long, smooth, green leaves. From the sides of the branches grow small, green berries covered with a pale green yellow. It grows in the United States and is abundant in New Jersey.

The leaves and berries are warm carminatives, stomachic and emmenagogue. Good for palsies, colic, hysterical complaints, scrofula, diarrhea, urinary troubles and jaundice. It is applied as a poultice for scrofulous swellings and tumors. The bark is the part used and is made into a tea or decoction. Slippery elm may be added to it. A tincture is also made of the bark.

The tea may be drank in doses of from 1 to 4 ounces for jaundice and kidney and bladder troubles. The powdered bark with blood root is good for sluggish ulcers. The tincture in 1 or 2 drop doses every 2 hours is especially good for epidemic jaundice. The dose of the powdered bark is from 15 to 20 grains. The decoction is made by using an ounce of the bark to a quart of water and the dose is from $\frac{1}{2}$ to 2 ounces. The infusion is made by using an ounce of the bark to a pint of water and the dose is from 1 to 4 ounces 3 or 4 times a day. The decoction is a good gargle for sore throat and is also good as an injection for leucorrhea and is fine for tender and bleeding gums.

BEARBERRY.

Red Berry—Mountain Box—Wild Cranberry—(*Arbutus Uva Ursi*)—(*Arctostaphylos Uva Ursi*).

Action.—Astringent, Tonic, Antilithic.

Uses.—Kidney, Bladder and Urinary Troubles, Diabetes, Diarrhea, Dysentery, Excess of Menses, Gonorrhea, Gleet.

Grows in North America and Europe. This is an evergreen shrub or vine. The leaves are oval, toothed, of a pale-green color and smooth on the under side. The flowers are whitish, terminating the stem in clusters of from six to twelve. The berries are of a scarlet color and contain 5 seeds. Grows on mountains and dry uplands all over the United States. Good for debilitating discharges and particularly for kidney, bladder and urinary passages. Good for diabetes, diarrhea, dysentery, excess of menses, chronic kidney and bladder troubles, chronic gonorrhea and gleet. In making the decoction use an ounce of the leaves to $1\frac{1}{2}$ pints of water and boil down to a pint. The dose is from $\frac{1}{2}$ to 3 ounces or half a small glassful 3 or 4 times a day. The dose of the powder is from 5 to 10 grains and of the fluid extract from $\frac{1}{2}$ to 1 dram.

BEECH DROPS.

Cancer Root—(*Epiphegus Virginianus*).

Action.—Astringent.

Uses.—Ulcers, Wounds, Erysipelas, Canker, Skin Affections.

This plant grows out of the roots of beech trees in low grounds and is from 6 to 8 inches high and of a brown, glossy, sickly color with brittle sprigs but no leaves. The root is bulbous and similar to canen. It must be gathered before the frost touches it.

Beech drops are a powerful astringent. The fresh bruised root frequently applied locally is said to be very good for ulcers and wounds and also for erysipelas and canker in the throat. The remedy may be prepared by boiling 8 ounces of the herbs in 2 quarts of water and sweetening. For erysipelas, open the bowels and take a teacupful of this decoction 4 times a day. At the same time apply cloths wet with the unsweetened decoction to the inflamed parts and so continue until cured. A poultice made of equal parts of beech drops, poke root and white oak bark is very good for ulcers and skin affections.

BITTER SWEET.

Woody Nightshade—Bitter Sweet Nightshade—(*Solanum Dulcamara*).

Action.—Narcotic, Diuretic, Diaphoretic.

Uses.—Liver Complaints, Ulcers, Scrofula, Whites, Obstructed Menses, Jaundice, Cancer of Breast, Syphilis.

This is an undershrub with a woody base and leaves in bunches at the joints. It has purple flowers and blossoms in June and July and the flowers are followed by scarlet berries. Grows in the United States and is usually found in swampy places on a rise of ground. The small twigs and stems should be gathered in late autumn.

Its action is to increase all secretions and excretions, particularly sweat, urine and stools, and it excites the heart and pulse. It can be used both externally and internally. Very good in real liver complaints, hard swellings, ill-looking ulcers, scrofula, whites, jaundice and obstructed menses. Good for cancer of the breast. Apply the juice over the cancer and cover the breast with the leaves. It is used in the same way for ulcers. For internal use boil $\frac{1}{2}$ pound of the stems or twigs in 1 gallon of water and give from 2 to 4 ounces 3 times a day. Equal parts of bitter sweet twigs, yellow dock root and stillingia, made into a syrup is good for scrofulous affections and syphilis.

BLACKBERRY—RED RASPBERRY—DEWBERRY.

Action.—Tonic, Astringent.

Uses.—Dysentery, Diarrhea, Cholera Infantum, Bleeding from Stomach and Bowels, Gleet, Leucorrhœa, Fallen Bowel, Fallen Womb.

The leaves and bark of the root are the parts used. Boil the bark in milk and it is good for dysentery when taken freely. Or, a very valuable preparation for dysentery is to take 2 pounds of bruised unripe blackberries and simmer them with 1 pound of loaf sugar and $\frac{1}{2}$ pint of brandy. This should be strained and bottled. Syrup of blackberry is also very good for dysentery. This is a tonic and strongly astringent. A decoction or tea made of the leaves of raspberry is also very good. A decoction made of the bark of blackberry and dewberry is good for use in diarrhea, dysentery, cholera infantum, relaxed condition of the bowels in children and slow bleeding from the stomach and bowels. Decoction of raspberry is good as an injection for gonorrhea, gleet, leucorrhœa and falling of the bowel and womb. For falling womb it may be used alone or in combination with equal parts of black cohosh and blackberry roots. It should be made into a decoction by using an ounce to a pint of water. The dose is from 1 to 4 ounces several times a day.

BITTER ROOT.

American Ipecac—Indian Physic—Black Indian Hemp—Canadian Hemp—Dog's Bane—(Apocynum Cannabinum).

Action.—Emetic.

Uses.—Dropsy.

There are two kinds. One kind grows in dry woodlands to a height of two feet. The other kind grows in wet or low lands usually 3 or 4 feet high and the roots, like the former kind, run horizontally beneath the surface but are longer and of a different color. The latter kind is more easily obtained and is generally used.

As a tea it can be taken freely and is very good for dropsy. It is called the vegetable trocar. You can use from 5 to 30 drops of the tincture every 3 hours or from 1 to 5 drops of the fluid extract every 3 hours. This is

excellent for heart and kidney dropsy. In making the tea use an ounce to a pint of water and give from $\frac{1}{4}$ to $\frac{1}{2}$ ounce 3 or 4 times a day.

BLOOD ROOT.

Red Root—Red Puccoon—(*Sanguinaria Canadensis*).

Action.—Acid, Emetic, Expectorant, Tonic, Antiseptic, Alterative.

Uses.—Lung and Liver Troubles, Catarrh, Croup, Whooping Cough, Typhoid Pneumonia, Rheumatism, Jaundice, Dyspepsia, Sick Headache.

Grows in most parts of the United States in woods and on shady banks in rich, light soil. It is one of the earliest and most beautiful spring flowers of this country, appearing in March and April. The root is about the thickness of a finger, 2 or 3 inches long, fleshy, reddish-brown without and brighter red within. Each bud gives off a single large, smooth leaf. The flower is white and of short duration. The whole plant is pervaded with an acid, orange-colored juice but the greatest quantity is in the root. It imparts its qualities to boiling water and to alcohol. The root should be kept in a dry place. Age and moisture impair its value.

It is an acid, emetic, expectorant, tonic and antiseptic and is a very active agent. Small doses stimulate the stomach and hasten the pulse and larger doses produce nausea and slow the pulse while the full dose causes active vomiting. It is used for the lungs and liver, catarrh, croup, whooping cough, typhoid pneumonia, rheumatism, jaundice, dyspepsia and sick headache. The tea is made by using an ounce of the root to a pint of water and the dose is from $\frac{1}{2}$ to 1 ounce 3 or 4 times a day. If given oftener it should be given in smaller doses. Do not give enough to nauseate. For several diseases it is given every few hours. The dose of the tincture is from 10 to 20 drops and of the fluid extract from 5 to 10 drops. For the diseases mentioned give 2 teaspoonfuls or more of the tea every two hours. For sick headache give the same dose every half hour. The tincture is very good for sick headache when used in the following way. Put 5 drops of good tincture into a glass half full of water and give 2 teaspoonfuls every 10 minutes until better. As an emetic for croup the dose of the powder is 10 to 20 grains and of the tincture, 20 to 30 drops. As a stimulant or expectorant give 3 to 5 grains and as an alterative for liver troubles give from $\frac{1}{2}$ to 2 grains 4 times a day. The dose of the tincture for these troubles is from 2 to 3 drops every 3 hours.

BLUE FLAG.

**Flag Lily—Snake Lily—Liver Lily—Flower de Luce—(*Iris Versicolor*)
(*Iris Pseudo-Acorus*).**

Action.—Emetic, Cathartic, Diuretic, Alterative.

Uses.—Bilious Sick Headache, Dropsy, Scrofula, Syphilis, Chronic Kidney and Liver Diseases.

Is found in moist places and on borders of ponds. It is a very attractive wild flower. The flowers are large and showy, violet-blue, and variegated with greenish-yellow and white, with purple veins. The flowers appear in May and June.

The fresh powdered root is an emetic and cathartic. It acts very decidedly on the liver and is a diuretic and alterative. The root loses its virtue with age and exposure. Immediately after it is dug and cleaned, bruise it and

infuse in spirits for a tincture; or, after carefully cutting out the dead matter and cleaning it, dry it quickly before a fire, pulverize, and bottle tight for use. As a cathartic give 20 grains of the powder and repeat it if necessary. The dose of the tincture made from the fresh root is 10 drops. It is very good in 1-drop doses for bilious sick headache. For dropsy give 10 grains of the powdered root every 2 hours; or, combine it with turkey corn or snake root and use as a watery cathartic. For anasarca and water in the chest use the saturated tincture of the root. Give a teaspoonful every 2 or 3 hours until the bowels move freely. It is good for scrofula and syphilis and can be combined with mandrake, black cohosh and poke root. In chronic kidney and liver diseases, from 5 to 10 grains of the powdered root given 3 or 4 times a day is very good. For powerful alterative action use equal parts of blue flag root, mandrake and prickly ash bark. Give 10 grains every 2 or 3 hours to fall short of cathartic action. This produces pain in some people and to avoid this a few grains of ginger should be added. This is a splendid remedy.

BONESET.

Thoroughwort—Feverwort—Sweating Plant—Crosswort—Vegetable Antimony—Ague Weed—Indian Sage—(Eupatorium Perfoliatum).

Action.—Diaphoretic, Tonic, Emetic, Alterative, Antiseptic, Cathartic, Febrifuge, Astringent, Stimulant.

Uses.—Fevers, Colds, Ague, Dropsy, Acute and Chronic Rheumatism, Catarrh, Bilious Fevers, Influenza.

This plant grows in the United States. It is a valuable sweater, tonic, alterative, antiseptic, cathartic, emetic, febrifuge, astringent and stimulant. It was one of the most powerful remedies of the native Indian tribes for fevers, colds, agues, etc. It grows most commonly in meadows and swamps near streams. The leaves are joined together around the stem, giving the effect of being run through by the plant. The plant is of a grayish-green color and the flowers are a pale white. The leaves are woolly below and rough above and taper where they are joined to a sharp point. The seeds are black and oblong. A strong decoction made of the plant should be taken warm. It vomits freely and is sufficient to break up almost any cold or fever at the beginning. It cleanses the stomach, excites all secretions, relaxes constriction and produces sweating. By causing sweating it is good for colds. Always take a drink of cold tea after the sweat is over. The cold infusion preparations are tonics and do not produce vomiting. The dose of the strong tea is from 2 to 4 ounces once or twice a day. The dose of the fluid extract is from 30 to 40 drops. It is good for intermittent and remittent fever, diseases of general debility, dropsy, troubles arising from intemperance, acute and chronic rheumatism, catarrh, bilious fevers, influenza and lake fevers. It may be used as a tonic (sweetened), laxative or emetic by changing the dose and using warm. The syrup does away with the nauseous taste. The dose of the powder is from 10 to 20 grains once or twice a day. Of the decoction and infusion the dose is from $\frac{1}{2}$ to 3 ounces once or twice a day. The cold preparations are not so exhausting. To make the infusion use 2 ounces of the plant to a pint of boiling water but do not boil it. To make the decoction boil 2 ounces of the plant in a quart of water. The dose of the fluid extract is from 30 to 60 drops.

BOXWOOD.
(Not Dogwood.)

Uses.—Menstrual Troubles.

The bark steeped and drank is a splendid remedy for menstrual troubles, especially in young girls. It was extensively and successfully used for this purpose by the early settlers. It can be bought at drug stores. Drink freely of the tea made of the bark.

BUCHU.

Action.—Diuretic.

Uses.—Scanty and Painful Urination, Inflammation of Bladder and Kidneys.

Buchu grows best in South Africa. It can be bought in packages at drug stores. To make buchu tea add an ounce of the leaves to a pint of boiling water, steep, and strain when cool. The dose is from 1 to 2 ounces every 3 to 5 hours. It is splendid for scanty or painful urination and is good when the bladder and kidneys are inflamed. It is very mild and soothing. It should be used often either alone or with bruised pumpkin seeds. The dose of the fluid extract is a teaspoonful.

BUCK THORN BRAKE.
(*Osmunda Regalis*.)

Action.—Tonic, Mucilaginous, Strengthening.

Uses.—Whites, Female Weakness, Dysentery, Diarrhea, Sprains, Weak Back.

This brake is common in the United States. It grows in swamps and on low grounds and may be known by its growing very large and in mats, from which an immense number of thick, brittle shoots spring up in the springtime, curling around like a buck's horn.

Its action is mucilaginous, tonic and strengthening. The roots and shoots in decoction or compounded with other articles form a very strengthening syrup for female weaknesses, particularly leucorrhea. The decoction is made by boiling 4 ounces of the plant in a pint of water and the dose is from 1 to 2 ounces every 2 to 4 hours. It is also good for dysentery and diarrhea and as a tonic during convalescence (getting well). One root infused in a pint of hot water for half an hour will convert the whole into a thick jelly. This is very valuable for female weaknesses. The root mixed with brandy is a very popular remedy as an external application for sprains, weak back, etc.

BURDOCK.
(*Arctium Lappa*.)

Action.—Cathartic, Diuretic, Diaphoretic.

Uses.—Bad Blood, Rheumatism, Gout, Venereal Diseases, Kidney Troubles.

Grows along road sides. Has burrs which stick tight to a person. Promotes sweating and urination and is very cleansing. Good for bad blood. The seeds, when pulverized and taken as a powder in from $\frac{1}{2}$ to 1 teaspoonful doses, act as a powerful diuretic. The decoction or tea taken freely is good for rheumatism, gout, venereal and other blood diseases. Acts better combined with other remedies like dandelion, yellow dock, wahoo, sarsaparilla,

prickly ash or wild cherry. The decoction is made by boiling 4 ounces of the root in a quart of water. Half a pint of this may be drank 3 or 4 times a day. The seeds are more diuretic than the root and are a more useful alterative. They are principally used for kidney troubles.

CARAWAY. (*Carum Carui.*)

Action.—Stomachic, Carminative.

Uses.—Flatulence, Colic.

This plant is cultivated in our gardens. It is a good stomachic and carminative (for gas). For colic give from $\frac{1}{3}$ to $\frac{1}{2}$ teaspoonful of the seeds. The tea is made by adding 2 teaspoonfuls of the seeds to a pint of boiling water. Do not boil the tea. This tea may be taken freely. The dose of the oil is from 1 to 2 drops. This is very good for wind colic in children. The following is a good combination for flatulence and colic. Take 2 fluid ounces of infusion of caraway, 1 fluid ounce of peppermint water, 1 dram of soda and 2 fluid ounces of syrup of rhubarb. Take from 1 to 2 teaspoonfuls every 3 to 4 hours.

CATNIP. (*Nepeta Cateria.*)

Action.—Sweater, Tonic.

Uses.—Colds, Flatulence, Amenorrhea, Dysmenorrhea, Nervous Headaches, Irritability, Inflammations.

This is a very good remedy for colds to produce sweating and also for colds and flatulence in babies. It is used warm. It is also very good to put into poultices. To make the tea use an ounce of the dried herb to a pint of water. This may be given freely to adults and to babies you can give from $\frac{1}{4}$ to $\frac{1}{2}$ teaspoonful. It is a tonic when used cold. It is good for amenorrhea and dysmenorrhea and also for nervous headaches and irritability. One teaspoonful at a dose of equal parts of fluid extract of catnip, fluid extract of valerian and fluid extract of skullcap, is very good for nervous headache, restlessness, etc. The leaves are used for poultices and also in fomentations for inflammations.

CAYENNE PEPPER.

Capsicum—Red Pepper—(*Capsicum Annuum*).

Action.—Stimulant, Irritant, Stomachic, Rubefacient.

Uses.—Stimulating Digestion. Delirium Tremens, Vomiting of Drunkards, Rheumatism, Neuralgia, Headache, Flatulent Colic.

This is a local stimulant and irritant. Taken in small doses internally it causes warmth and stimulates digestion. It is good for delirium tremens and to check the vomiting of drunkards and to stimulate the nervous system of those who are trying to stop drinking. Tincture of capsicum is used in liniments for neuralgia, rheumatism, headache, flatulent colic, etc. The powder is frequently sprinkled over the surface of plasters. The dose of tincture of capsicum is from 5 to 30 drops well diluted.

CHAMOMILE.

Roman Chamomile—German Metricaria—(*Anthemis Nobilis*).

Action.—Stomachic, Diaphoretic.

Uses.—Colic and Green Diarrhea of Babies, Fretful Babies, Vomiting during Pregnancy, Bitters.

Good for colic and green diarrhea of babies, especially at teething time when they are cross, fretful and sleepless. Make a tea by putting the flowers into cold water and give freely. This is very good to produce sweating. It should be given freely in warm infusion. Use 4 drams of the plant to a pint of cold water and give from 1 to 2 ounces at a dose. Chamomile makes good bitters for the stomach and is good for vomiting during pregnancy.

CHESTNUT. (*Castanea.*)

Uses.—Whooping Cough, Light Coughs, Diarrhea.

Use the leaves, which should be collected in September or October. Chestnut leaf tea made from the green leaves and drank freely is one of the best remedies known for whooping cough. It is also good for other light coughs. The fluid extract is better for diarrhea. The dose is from 1 to 2 teaspoonfuls. The tea is made by using a handful of the leaves to a pint of water and the dose for children is $\frac{1}{2}$ ounce 3 or 4 times a day.

CINNAMON. (*Cinnamomum.*)

Action.—Stimulant, Stomachic, Carminative, Astringent, Aromatic.

Uses.—Bowel Complaints, Stomach Tonic.

Cinnamon is stimulating and warming and a good stomach tonic. It is also good for bowel complaints. It is much used as a flavoring extract and to disguise the taste and smell of other medicines. The dose of cinnamon in powder is $\frac{1}{3}$ of a small teaspoonful.

CLEAVERS.

Goose Grass—Catchweed—Clivers—(*Galium Aparine*).

Action.—Diuretic, Aperient, Antiscorbutic.

Uses.—Suppression of Urine, Kidney Troubles, Gravel, Tumors, Freckles, Erysipelas, Scarlet Fever, Measles.

This vine-like grass grows in hedges, on low grounds, in meadows and near brooks. It rises from 4 to 6 feet in height, climbing the bushes near it. The leaves are eight in a whorl and the upper side is whitish with sharp prickles. The stem is square, the angles being guarded with sharp prickles which are bent downward. The flowers are small, inconspicuous and divided in 4 segments. These change into a rather large fruit composed of two berries slightly adhering together and covered with hooded prickles containing two seeds.

This is one of the most valuable diuretics or kidney remedies that our country produces. It is good and speedy for all suppression of urine and for gravel complaints. The pressed juice mixed with oatmeal to the consistency of a poultice and applied over an indolent tumor three times a day, keeping the bowels open by castor oil, and taking a tablespoonful of the juice every morning, will often drive the tumor away in a few days. The tea should be made with cold water. Three or four ounces of the dried herb to a quart of water is sufficient. This should be used every day as a common drink and especially for gravel. It seems to possess a solvent power over the stone or gravel, crumbling it into a sandy substance. It is peculiarly applicable to inflammation of the kidneys and bladder from its crumbling as well as its diuretic quality. You can make a warm tea by using $1\frac{1}{2}$ ounces

of the herb to a pint of warm water and steeping for two hours. Take 2 to 4 ounces 3 or 4 times a day. This may be sweetened with honey or sugar. Take equal parts of cleavers, maiden hair and elder blows and steep in warm water for 2 or 3 hours and when cold drink freely for erysipelas, scarlet fever and measles. The tea made with cold water is good for freckles when applied locally several times a day.

CLOVES. (*Caryophyllus*.)

Action.—Stimulant, Aromatic, Carminative.

Uses.—Nausea, Vomiting, Toothache, Cholera Morbus, Wind Colic.

A decoction of cloves is good for sickness at the stomach and to check vomiting and also for wind colic. The decoction is made by boiling 2 or 3 teaspoonfuls of ground cloves in $\frac{1}{2}$ pint of sweet milk. The dose is a tablespoonful every 15 to 30 minutes as hot as can be borne. This will be found valuable for cholera morbus. The oil of cloves may be used instead of the powder. The oil of cloves put upon cotton and placed in the cavity of a tooth is good for toothache.

COLUMBO ROOT. (Imported.)

Action.—Emetic, Cathartic, Tonic, Antiseptic.

Uses.—Fevers, Debility, Stomach Troubles, Headache, Rheumatism, Inflammation.

This is an emetic and cathartic when fresh and is good as a tonic, antiseptic and for fevers when dry. It yields its bitterness to water but proof spirits is its proper menstruum. The doses are from 1 to 2 drams of the powder and 1 to 2 ounces of the tea. The root ought to be collected from the fall of the second year to the spring of the third year of its growth. The root is a good antiseptic and bitter and is used successfully in debility and diseases of the stomach. It is good for relaxed stomach and bowels, indigestion, etc. It takes the place of rhubarb as a laxative for children and pregnant women. Cold water helps its efficiency and prevents nausea and vomiting. A teaspoonful of the powder in hot water and sugar will give relief in case of over-eating or weak stomach. The leaves produce sweating when laid on the forehead and frequently relieve headache. The fresh leaves applied externally in this manner are also good for rheumatism and inflammation. The dose of the tincture is from 1 to 2 drams. The dose of the infusion is from 1 to 2 ounces 3 or 4 times a day. The infusion, or tea, is made by using an ounce of the root to a pint of water.

COMFREY.

Healing Herb—Gum Plant—(*Symphytum Officinale*).

Action.—Mucilaginous, Expectorant, Emollient.

Uses.—Bruises, Ruptures, Fresh Wounds, Sore Breasts, Ulcers, Gout, Soreness of Bowels, Coughs, Whites, Female Weakness.

It grows in meadows near springs and is planted in gardens for family use. The root is the part used and is soothing and mucilaginous like marsh-mallow. It blossoms in May and June and bears white or rose-colored flowers at the extremities of the branches. The root is large and is blackish outside and white inside. The fresh root when bruised is a good application for

bruises, ruptures, fresh wounds, sore breasts, ulcers, gout, etc. A decoction made by using from $\frac{1}{2}$ to 2 ounces of the root to a quart of water is good for internal injuries and soreness and erosions of the bowels caused by diarrhea and dysentery. It is good for coughs and promotes expectoration. Drink the decoction freely during the day. It is also good for leucorrhea and female weaknesses.

CORNSILK. (Maida Stigmata.)

Action.—Diuretic.

Uses.—Congested Kidneys, Chronic Inflammation of Kidneys, Suppressed Urine, Irritable Bladder, Acute and Chronic Cystitis, Dropsy.

The green pistils of maize, or Indian corn, gathered when the tassel has shed its pollen are good as medicine. Cornsilk is a diuretic in local dropsy and heart trouble. It is good for congested kidneys, chronic inflammation of the kidneys, suppressed urine, irritable bladder and acute and chronic cystitis. It is good for dropsy of the lower extremities from heart or kidney disease. The fluid extract is the best way to give it and the dose is from 1 to 2 drams every 3 to 4 hours. A tea may be made of the cornsilks but is not so easily made as most teas. The following combination is good for dropsy. Take $1\frac{1}{2}$ ounces of the fluid extract of cornsilk, 3 ounces of the fluid extract of dandelion and 3 ounces of the infusion of digitalis. Give 2 teaspoonfuls in water every 3 or 4 hours. Another good preparation for the same purpose is made by taking 2 ounces of fluid extract of cornsilk, 3 drams of cream of tartar and 2 ounces of sweet spirits of nitre. The dose of this is half a teaspoonful every 2 or 3 hours. Cornsilk is a good remedy in the fluid extract form but, as before said, it is difficult to make a tea. However, a tea made of powdered corn is very good for nausea and vomiting in many diseases.

CRAWLEY ROOT.

Fever Root—Dragon's Claw—Chicken's Toes—Coral Root—(Corallorhiza Odontorhiza).

Action.—Diaphoretic.

Uses.—Fevers, Pleurisy, Scanty and Painful Menses, Bilious Colic.

It grows in beds or patches and rises 6 or 7 inches high. The leaves grow in a cluster from the top of the root. The blossoms are yellow. It has a small black root resembling cloves and having a strong smell similar to nitre. It grows in Canada, New York and some of the other northern states. The root is effectual in all remittent, nervous and inflammatory fevers like pleurisy. It equalizes the circulation, relaxes the system generally and brings a moisture to the surface. It is diaphoretic, or produces sweating. Prepare the root by pulverizing and putting into tightly corked bottles. After the stomach and bowels are well cleared by a cathartic, a half a teaspoonful of the powder may be given every 2 hours in a cup of warm herb tea or warm water. This may be continued until a moisture appears on the skin or until 5 or 6 doses have been taken. It can also be given with pleurisy root for pleurisy. Combined with blue cohosh it forms an excellent medicine for amenorrhea (scanty menses or none at all) and dysmenorrhea (painful menses). It is very good for after pains and suppressed after flow. It is also very good to act upon the bowels and liver when combined with mandrake or Culver's root. Mixed with wild yam it is very good for bilious colic.

CROWFOOT.**Wild Cranesbill—Storkbill—Tormentil—(Geranium Maculatum).****Action.**—Astringent.**Uses.**—Wounds, Gonorrhea, Ulcers, Diabetes, Bloody Urine, Profuse Menstruation, Aphthous Sore Mouth, Dysentery, Diarrhea, Cholera Infantum, Bleeding Piles, Nose Bleed, Hemorrhage, Gleet, Leucorrhea, Flooding, Quinsy.

This plant is perennial, horizontal; has a thick, rough, knobby and fleshy root, black outside and reddish inside, with short fibres. It has long, slender stalks, 1 to 3 feet high with long narrow leaves or segments at a joint with 2 leaves at each fork. The flowers are large and generally purple, mostly in pairs with long stems like a crane's bill springing from the leaves. The fruit is a capsule in 5 sections containing 1 seed each. This plant grows in all parts of the United States. It is found in open woods, thickets and hedges. Flowers from April to June. The root is used and should be collected late in autumn.

It is a powerful astringent. The Indians used it for wounds, gonorrhea, ulcers of the legs, diabetes, bloody urine, too great menstruation and aphthous sore mouth. It is good for children with poor stomachs. It is used in infusion as an astringent with milk in the second stage of dysentery, diarrhea and cholera infantum. A strong decoction of the root, 2 ounces to a pint of water, may be injected for bleeding piles and retained as long as possible. As an ointment it is also good for piles. In making the ointment add 2 ounces of the finely powdered root of cranesbill to 7 ounces of tobacco. Apply the ointment to piles 3 or 4 times a day. Crowfoot or cranesbill is also good for nose bleed and bleeding from wounds and small vessels, as after pulling teeth. Apply the powder to the bleeding parts and if possible cover with a cotton compress. In decoction in combination with unicorn root it has proved of service in diabetes and Bright's disease. For gleet and leucorrhea, a decoction of 2 parts cranesbill and 1 part blood root forms an excellent injection. The decoction is also useful as a gargle for quinsy, sore throat and in severe cases of flooding after labor. In these troubles the application of cranesbill either in decoction or fluid extract by injection or by sterile cloths is very good. The dose of the powdered root is from 20 to 30 grains 3 or 4 times a day. In making the decoction an ounce of the root may be used to a pint of boiling water and the dose is one or two ounces three or four times a day. Crowfoot or cranesbill is an excellent remedy.

CULVER'S ROOT.**Culver's Physic—Black Root—Tall Veronica—(Leptandra Virginica).****Action.**—Antiseptic, Tonic, Diaphoretic, Cathartic.**Uses.**—Bilious Fever, Torpid Liver, Constipation, Dropsy, Dyspepsia.

This root grows in the United States and is perennial, black or dark colored with many small fibres growing from a long, woody candel or head. The stems, several arising from the same root, are round, somewhat hairy, growing from 2 to 4 feet high and branching with the branches bearing on their tops a spike or tassel of crowded white flowers. The leaves are in whorls of 4 or 5 at a joint and are long, narrow and pointed with edges set with unequal sharp teeth. Grows in wetish lands, near streams and in open glades and plains and in limestone lands. The dried root is used as the fresh root is too violent and drastic. It operates mildly and certainly and does



Dandelion.

Used for Liver Complaints, Constipation, Jaundice, Dyspepsia, Dropsy, etc. Also used in Blood Remedies.



Stramonium or Thorn Apple.
(Poison.)

Used for Piles, Painful Monthlies, Burns, Cancers, Tumors, Ulcers, Sciatica, Asthma, Epilepsy, Insanity, etc.



Henbane or Poison Tobacco.

Used for Fistula, Boils, Ulcers, Swollen Breasts, Tumors, Inflamed Eyes, etc.



Iris or Blue Flag.

Blue Flag is used for Bilious Sick Headache, Dropsy, Scrofula, Venereal Diseases and Chronic Kidney and Liver Diseases.



Hops.

Used for Nervousness, Sleeplessness, Indigestion, Inflammations, Rheumatism, Earache, Pleurisy, Toothache, Appendicitis, etc.



Lily of the Valley.

Used for Heart Troubles, Bright's Disease, Dropsy, Urinary Diseases, etc.

not produce much depression. It is good for bilious fever, torpid liver, constipation and dropsy. It is antiseptic, tonic and a sweat producer. In fevers it removes the black tarry matter from the bowels without weakening them. The dose is from $\frac{1}{2}$ to 1 teaspoonful added to half a gill of boiling water and sweetened if desired. Repeat in 3 hours if it does not move the bowels. Powder the dry root. The dose of the fluid extract is from $\frac{1}{2}$ to 1 dram. To make a weak tea use an ounce to a pint of water and give $\frac{1}{2}$ ounce at a dose. The dose of the powdered dry root as a cathartic is 20 to 60 grains. Use the infusion in fevers. One half of a fluid ounce should be given every hour until it operates and it should be repeated daily if necessary. It is very good in small doses as a laxative and a tonic for dyspepsia and when the liver is torpid. The dose is from 3 to 5 grains of the root 4 times a day.

DANDELION.

Monkshood—(Taraxacum).

Action.—Laxative, Diaphoretic, Diuretic, Expectorant, Tonic, Alterative, Aperient.

Uses.—Liver Complaint, Constipation, Jaundice, Dyspepsia, Dropsy, Blood Purifier.

The root should be gathered in the autumn. It is laxative, diaphoretic, diuretic, expectorant, tonic and alterative. It is good for torpid liver and liver complaint, constipation, jaundice, dyspepsia and dropsy. It is prepared in decoction or infusion from the green plant. The pressed juice is the best. It can be used freely. Combined with other remedies such as yellow dock, burdock or wahoo it acts very well as a blood purifier. The dose of the root extract is from 10 to 40 grains; of the root fluid extract, from 1 to 2 drams and of the infusion, from 1 to 2 ounces. The infusion may be taken frequently. The following is a good blood combination. Take 1 ounce of fluid extract of dandelion, 60 grains of potassa iodide, 1 ounce of fluid extract of yellow dock, 1 ounce of fluid extract of burdock, 1 ounce of fluid extract of wahoo and 1 ounce of fluid extract of red clover. The dose is a teaspoonful 4 times a day. Dandelion may be taken as a tea, the dried roots may be eaten or the plant may be eaten in the form of greens for either liver or bowel difficulties.

DWARF ELDER.

(Aralia Hispida.)

Action.—Emetic, Purgative.

Uses.—Dropsy, Suppressed Urine, Gravel.

It rises 2 or 3 feet in height, is herb-like, erect and prickly. The leaves are opposite, pinnated and composed of 4 or 5 pairs with an odd one at the extremity. The flowers are terminal, umbelliferous in scattered shafts. The fruit is round, black and disagreeable to the taste. It is a single-celled berry containing 3 irregularly shaped seeds. This plant grows in hemlock lands in the United States. The inner bark of the root is the part used.

One gill of the juice of the inner bark will vomit and physic. The juice, infusion or decoction is good for dropsy. For common use 2 ounces of the dried root may be boiled in a quart of water and a gill taken night and morning. Or, 1 ounce of the inner bark and 1 ounce of the dry root may be put into 3 quarts of water and boiled down to 2 quarts. A teaspoonful of this taken 3 times a day is good for suppression of urine. This is also good for

dropsy and gravel. In making the decoction of the fresh roots, use 1 ounce of the roots to a pint of water and take from 2 to 4 ounces, 3 times a day.

ELDER.

Sweet Elder—Elder Flowers—Black-berried Elder—(*Sambucus Canadensis*).

Action.—Diuretic, Alterative, Purgative, Diaphoretic, Expectorant, Sudorific, Aperient, Emetic.

Uses.—Sores, Erysipelas, Liver Troubles, Blood Remedy, Dropsy, Measles, Kidney Troubles, Inflamed Eyes, Piles.

This is a very common shrub growing from 8 to 10 feet high and is found in all parts of the United States. Leaves are dark green. Flowers are white and in clusters. The berries are dark purple and are good for piles and the urine. The young leaves and buds are too active for use. The inner bark, berries and flowers are used. The inner bark boiled with cream makes a splendid salve for sores and erysipelas. A warm tea made of elder flowers will gently stimulate and produce sweating. Elder flower tea is also good for weak or inflamed eyes when applied locally. A cold tea acts as a diuretic, alterative and cooler of the blood and may be used for liver troubles of children. In infusion with maiden hair and beech drops it is useful for erysipelas. An infusion of the inner bark in wine, or pressed juice in doses of from $\frac{1}{2}$ to 1 ounce will purge. In teaspoonful doses it is good for dropsy, etc. Hot elder flower tea made by using an ounce of the flowers to a pint of boiling water is very good to bring out the eruption of measles. The juice of the root in one ounce doses daily acts as a watery cathartic and diuretic (kidney worker) and is good in dropsical affections.

ELECAMPANE.

(*Inula Helenium*.)

Action.—Tonic, Stimulant.

Uses.—Dyspepsia, Chronic Bronchitis, Catarrh of Bladder, Suppressed Menstruation, Skin Eruptions, Lung Diseases, Sciatica, Gout, Gravel, Facial Neuralgia.

A common plant growing by the roadsides and in meadows. Its large, fibrous root is brown outside and white inside. The stem, which grows from 6 to 8 feet high, is branched toward the top and covered with a whitish down. The flowers are located at the ends of the branches and are yellow in color. The root has a spicy smell and contains a camphorated oil.

This was a famous medicine of early times and was used for lung diseases and externally it was used for gout, gravel, sciatica and facial neuralgia. It is now used for chronic eruptions of the skin, chronic bronchitis, catarrh of the bladder, suppressed menstruation and dyspepsia. It is made into a decoction by boiling from $\frac{1}{2}$ to 1 ounce of the crushed root in a pint of water.

ELM.

Slippery Elm—Red Elm—(*Ulmus Fulva*).

Action.—Soothing, Mucilaginous.

Uses.—Coughs, Colds, Influenza, Pleurisy, Quinsy, Dysentery, Painful Urination, Inflammation of Stomach and Bowels, Poisoning, Erysipelas, Burns, Scalds, Piles, Bruises, Ulcers, Gonorrhea, Gleet, Whites, Diarrhea, Poultices, "Going Down" of Mumps.

Found in all parts of the United States. It is mostly prepared as a fine flour, a large teaspoonful of which may be briskly stirred into a pint of cold water and this again stirred into a quart of hot water and then boiled. This may be drank freely. It is very good for coughs, colds, influenza, pleurisy, quinsy, dysentery, and painful urination. It is also good for inflammation of the stomach and bowels and especially after poisoning when mild mucilaginous drinks are required. When used for the latter purpose it should be drank cold. The bark may also be chewed. Poultices of ground elm bark with lead water are good for erysipelas and local inflammations and may be used either hot or cold.

In making mucilage of elm use 6 parts of dried bark to 100 parts of boiling water and drink freely. This is good as a bland drink after poisoning. Used alone as a poultice, slippery elm has been found very good for inflamed surfaces, fresh wounds, burns, scalds, bruises and ulcers. This is also very good when mumps go down to the testicles. The poultice should be changed every 2 to 4 hours. Injections of slippery elm tea made from the bark is good for diarrhea, whites, piles, gonorrhea and gleet. Powdered bark sprinkled over the surface will prevent chafing and it allays itching and heat in erysipelas. Make the tea of the bark by using 2 ounces of the bark to a pint of boiling water. This may be drank freely.

FALSE UNICORN ROOT.

(Blazing Star.)

Action.—Tonic.

Uses.—Prevention of Miscarriages, Dyspepsia, Loss of Appetite, Weakness of Generative Organs, Leucorrhea, Amenorrhea, Dysmenorrhea.

The root is perennial, large and bulbous and from it arises a simple, very smooth and somewhat angular stem from 1 to 2 feet high. The root is from 1 to 2 inches long and of a dry, dark color. The root and leaves are green all winter and spread upon the ground in the shape of a star. The root ends as if it were bitten off. The leaves are acute and small and at some distance from each other. Radical leaves are broader and from 4 to 8 inches long, $\frac{1}{2}$ to 1 inch in width, narrow at the base and formed into a sort of whorl at the base. The flowers are small, very numerous and of a greenish white. There are many seeds in each cell. Plant is indigenous to the United States and is abundant in some of the western states. It grows in woodlands, meadows, etc., and flowers in June and July. It is somewhat similar to aletris but its leaves are sharply pointed and it has a straight slender spike of scattered flowers. The root is the part used.

It is a tonic and was much used by the Indian women to prevent miscarriages. It is good for weakness of the generative organs. From 1 to 15 grains of the powder taken 3 or 4 times a day is good for dyspepsia, loss of appetite and for diseases of women. It is good for leucorrhea, amenorrhea, dysmenorrhea and to prevent miscarriage. The decoction is made by using 1 ounce of the root to a pint of water and the dose is from 1 to 3 ounces. The dose of the powder is from 10 to 20 grains.

FENNEL.

(*Anethum Fœniculum.*)

Action.—Carminative, Aromatic.

Uses.—Dyspepsia, Flatulent Colic.

This is raised in gardens. It blossoms in June and July and ripens its fruit in September. It is good for dyspepsia and flatulent colic of children. Can be given freely. The seeds can be given in from $\frac{1}{4}$ to 1 teaspoonful doses but it is better when boiled or steeped. For the tea use 1 ounce to a pint of water. The dose of the tea is from $\frac{1}{4}$ to 1 teaspoonful 3 or 4 times a day.

FIRE WEED.

Colt's Tail—Mare's Tail—Canada Fleabane—(Erigeron Canadense).

Action.—Diuretic, Tonic, Astringent.

Uses.—Bleeding, Profuse Menses, Metrorrhagia, Dysentery, Piles, Pain in Back, Bruises, Sprains, Boils, Sore Throat.

It is most frequently found in partly cultivated fields in Canada and the northern part of the U. S. It grows about 3 feet high and is covered with stiff hairs and has bushy tops with very small flowers which grow in long clusters at the ends of the stems. It should be gathered in July or August. The decoction or infusion can be used but it loses much of its strength in this form. It is better to buy the oil of fire weed. Its power of controlling bleeding is very great. It is good for metrorrhagia, or bleeding from the womb, and menorrhagia, or too free menses. Take from 5 to 8 drops at a dose, on sugar or in capsule, every 1 to 3 hours for bleeding as above and also for dysentery and nose bleed. Apply locally for pain in the back and also for piles. It is good for bruises, sprains and wounds generally. Is used in liniments. The tea is made by using 1 ounce to a pint of boiling water and the dose is from 2 to 4 ounces 3 or 4 times a day. The oil is very good when applied to piles, boils, sore throat and to small wounds to stop bleeding. Combine with goose grease. Internally give from 5 to 8 drops on sugar for diarrhea, dysentery and bleeding from the kidneys. Good also for womb bleeding. Can repeat every 5 to 10 minutes for 4 doses.

FOXGLOVE—(Poison).

Digitalis—Purple Foxglove—Fairy's Glove—(Digitalis Purpurea).

Action.—Narcotic, Sedative, Diuretic.

Uses.—Inflammation of Lungs, Pleurisy, Dropsy of Chest, Inflammatory Affections, Heart Disease.

The stem grows 2 or 3 feet high and is straight and hairy. The leaves are whitish, large, oval and hairy on both sides. The flowers are of a deep reddish purple color.

It is a poison and narcotic and should only be administered by one who understands its action. It is a valuable remedy for heart troubles, dropsy of the chest, pleurisy, inflammation of the lungs and all inflammatory troubles.

GARLIC. (*Alium Sativum*.)

Action.—Antiseptic, Expectorant.

Uses.—Coughs, Colds, Croup, Chronic Bronchitis, Capillary Bronchitis, Retention of Urine, Convulsions, Pneumonia.

Garlic is well known by its strong disagreeable odor and its taste which is stronger than onion.

It is an antiseptic and stimulating expectorant. It is good for coughs and colds. A poultice of garlic is good for croup. It is very good in chronic

bronchitis and in capillary bronchitis of children. For these purposes it may be used as an ingredient in poultices. Garlic is generally used in syrup form. The dose is from $\frac{1}{6}$ to 1 teaspoonful. The following is a good combination for bronchitis of children. Take 2 ounces of syrup of garlic, 1 ounce of sweet spirits of nitre and 1 ounce of glycerine. The dose is from 1 to 2 teaspoonfuls in water every 2 or 3 hours. Another good preparation is made by mixing 3 ounces of syrup of garlic with 2 ounces of syrup of tar. A teaspoonful or two may be taken in water every 2 or 3 hours.

The bruised bulbs applied as a poultice over the bladder is good for retention of urine. Applied to the front of the chest it is good for pneumonia of infants. Applied to the feet it is fine for convulsions of children. The dose of the fresh juice of the bulb is from $\frac{1}{2}$ to 1 teaspoonful. If used too freely it causes headache, flatulence, stomach disturbance, piles and fever.

GENTIAN.

(*Gentiana Americana*.)

Action.—Cathartic, Sudorific, Tonic, Antiseptic, Febrifuge, Stomachic.

Uses.—Stomach Troubles, Constipation.

This plant is a native of Europe though it is found in the U. S. It rises 2 or 3 feet in height; the stem is smooth, strong and erect; the leaves which arise from the lower part of the stem are pear shaped, large, ribbed and rough, while those from the upper part are more ovate, smooth and sessile. Large yellow flowers, produced in whorls, grow along the stalks. It is perennial and grows along roadsides. The root is the best part to use.

Its action is not astringent but it is a bitter tonic and antiseptic. In large doses it is cathartic and sudorific. It invigorates the stomach and is very useful in debility of the digestive organs. It increases the appetite, prevents the souring of foods and aids in the digestion of solid food. In combination it is good as a tonic. The tea is made by using 2 ounces of the root to a pint of boiling water. The dose is from 1 to 2 ounces 3 or 4 times a day. The following is a good compound. Take 2 ounces each of tincture of gentian and tincture of cinchona compound and $2\frac{1}{2}$ drams of tincture of nux vomica. Shake well and give a teaspoonful before or after meals. The dose of the fluid extract of gentian is from 30 to 60 drops and of the compound tincture, from 1 to 4 drams.

GINGER.

(*Zingiber Officinale*.)

Action.—Diaphoretic, Stimulant, Condiment, Carminative.

Uses.—Colds, Bilious Attacks, Diarrhea, Dysentery, Flatulent Colic, Cholera Morbus.

This is a very good household remedy. It is excellent for colds and bilious attacks and when the stomach and bowels need warming. When hot and strong it is good for sweating. Good for diarrhea, dysentery, flatulent or wind colic, cholera morbus, biliousness, colds and coughs. To make the tea add $\frac{1}{2}$ ounce of powdered or bruised ginger to a pint of boiling water. The dose is from 1 to 2 fluid ounces. The dose of tincture of ginger is from 10 drops to a teaspoonful. A larger dose may be taken if it is to be taken but once. For a child with colic or diarrhea give from 1 to 4 drops every 2 hours. It is also used for external application. A spice poultice is excellent for pain in the bowels. This is made by taking equal parts of ground ginger, cinna-

mon, cloves and allspice. One-fourth part of cayenne pepper may be added if needed. Place all in a flannel bag, spread evenly, wet with alcohol or whiskey and apply to the affected parts. Re-wet, if necessary, to keep it moist.

GINSENG.

Red Berry—Ninsin—Five Fingers—(Panax Quinquifolium).

Action.—Nervine, Tonic, Restorative, Stimulant.

Uses.—Debility, Stomach Troubles, Gravel, Weak Generative Organs.

Ginseng grows about a foot high. There are 5 leaves to a main stem. It has small white flowers which are followed by red berries. The root is white and fleshy. The root may be tinctured in old Jamaica spirits and taken 3 times a day on an empty stomach. Good for pain in the bones from colds, debility, weakness from excessive venery, gravel and is a good restorative. It improves the appetite, strengthens the stomach and invigorates the system. The powdered root may be taken in teaspoonful doses or the decoction may be taken in teacupful doses several times a day as a nervine or tonic. A tea may also be made of the leaves. The Chinese use much ginseng and it is cultivated in gardens.

GOLDEN ROD.

Sweet Scented Golden Rod—(Solidago Odora).

Action.—Stimulant, Carminative, Aromatic.

Uses.—Nausea, Pain in Stomach and Bowels.

There are many kinds of golden rod but the flowers and leaves of the kind used as a medicine taste somewhat like fennel or anise. It is called sweet scented golden rod. The tea should not be boiled. Given freely while warm it is good for nausea or sickness at the stomach and for pain in the stomach and bowels which is caused by gas.

GOLDEN SEAL.

Yellow Puccoon—Orange Root—(Hydrastis Canadensis).

Action.—Tonic, Alterative, Laxative.

Uses.—Dyspepsia, Loss of Appetite, Sore Mouth, Inflammation of Vagina, Leucorrhea, Gleet, Chronic Gonorrhea, Ulcers, Sore Throat, Inflammation of Bladder.

The root is perennial, crooked, wrinkled, rough and of a bright yellow color with many long fibres. The stem is round, simple, straight and grows from 8 to 14 inches high. It commonly bears 2 rough leaves at the top, somewhat resembling the leaves of the sugar maple tree, in the center of which appears the flower which is followed by a fleshy, red and many seeded berry.

It acts especially upon the mucous surfaces. It is a powerful and valuable bitter tonic which is good for weakness and loss of appetite. It is very good when combined with other tonics. It is good after recovery from fevers, for dyspepsia and for sore mouth. For the later stages of gonorrhea use the fluid extract of hydrastis as an injection. As an injection use $\frac{1}{2}$ dram of fl. ext. to $\frac{1}{2}$ pint of water. Also good for inflammation of the vaginia and for leucorrhea. It stains clothing. In full strength or diluted it is good for sore mouth and sore throat. In small doses of from 1 to 2 grains of the powder taken after meals it is good for dyspepsia. It is used externally for sloughing ulcers and sores. Combined with cransbill it very good for diarrhea. A decoc-

tion made by using 2 parts of golden seal and 1 part of cranesbill is very good for gleet, chronic gonorrhea and whites. It is very good as an injection for cystitis or inflammation of the bladder. For this it should be used as a decoction with 1 ounce of the root to a pint of boiling water. Should be used twice a day. Sweetened with honey and used as a gargle or wash it is very good for ulcerated sore mouth and throat. The dose of the powder is from 1 to 10 grains; of the tincture, from 1 to 2 teaspoonfuls; of the fluid extract from 1 to 5 grains; of the tea from $\frac{1}{2}$ to 2 ounces, 3 or 4 times a day.

HARD HACK.

Meadow Sweet—Steeple Bush—White Leaf—(*Spiræa Tormentosa*).

Action.—Tonic, Astringent.

Uses.—Diarrhea, Cholera Infantum, Female Troubles, Loss of Appetite, Bleeding from Lungs.

This is a small shrub from 2 to 4 feet high with many simple, erect, round, downy, hard, brittle and purplish stems, furnished with alternate leaves which are dark green or brownish above and covered with a rusty white beneath. The flowers are small, very numerous, red or purple, and grow at the end of the stems in an irregular cluster. Grows commonly on low grounds and in meadows in most parts of the U. S. Flowers in July and August. The fruit is persistent, remaining throughout the winter and furnishing food for the snow bird.

It is a tonic and astringent and useful in diarrhea and cholera infantum. As a tonic it may be used in debility where there is want of appetite. The Osage Indians chewed the dried roots and stems and drank a cold tea of the plant for hemorrhage of the lungs. The Indian women used the infusion as a wash for female troubles. The decoction is made by using 1 ounce to a pint of water and the dose is from 1 to 2 fluid ounces.

HEMLOCK TREE.

Hemlock Spruce—(*Pinus Canadensis*).

Uses.—Falling of Womb. Rheumatism, Lumbago, Sciatica, Piles, Leucorrhea, Pharyngitis, Menstrual Diseases.

The tree grows in Canada and the northern part of the U. S. and attains a height of 70 or 80 feet. A decoction made of the bark is an excellent wash for falling of the womb. Oil of hemlock is valuable externally for rheumatism, lumbago and sciatica. It should never be taken internally. The decoction is excellent for piles, leucorrhea and pharyngitis. The dilute tincture is good for menstrual diseases and is applied locally for piles. The decoction, 2 ounces of bark to a quart of boiling water, should be used externally only. It should boil a long or short time depending upon the strength desired.

HENBANE—(Poison).

Black Henbane—Fetid Nightshade—Poison Tobacco—(*Hyoscyamus Niger*).

Action.—Narcotic, Anodyne, Soporific.

Uses.—Fistulas, Boils, Ulcers, Swellings of Breasts, Tumors, Inflamed Eyes.

Cultivated for use as a medicine. Grows 2 or 3 feet high. The flowers are funnel shaped and of a dingy yellow with streaks of a bright purple color. It is a very poisonous narcotic and often causes death by being taken by mistake.

Externally it may be applied as a poultice or cloths may be wrung out of the hot decoction. Thus applied it is good for all kinds of painful inflammations, such as swellings of the breasts, boils, fistulas, scrofulous ulcers, tumors, inflamed eyes and cramps in the bowels. Internally it acts the same as belladonna and should be used with caution.

HIGH CRANBERRY.

Cramp Bark—(Viburnum Opulus).

Action.—Tonic, Anti-spasmodic.

Uses.—Cramps.

This grows in swamps and rich low lands in Canada and the northern part of the U. S. The leaves resemble a goose's foot. The flowers are white and in clusters. The berries resemble common cranberry and remain during the winter. They make a good drink. The bark of the root is a tonic and good for cramps. For the decoction use an ounce of the bark of the root to a pint of water and give 2 ounces 2 or 3 times a day. The tincture is made with 1 ounce of pulverized bark mixed with a quart of wine. The dose is a wine-glassful twice a day. The decoction of the root taken freely is good for cramp in any part of the body and especially during pregnancy. The following combination is good. Take 2 ounces of cramp bark, 1 ounce of skullcap, 1 ounce of skunk cabbage, $\frac{1}{2}$ ounce of cloves and 2 teaspoonfuls of capsicum. Coarsely bruise and add 2 quarts of good sherry or native wine and take from 1 to 2 ounces 2 or 3 times a day.

HOLLYHOCK.

(Althæa Rosea.)

Uses.—Leucorrhæa, Inflammation of Mucous Surfaces.

Plant is well known. A tea made of the flowers may be drank freely and is fine for leucorrhæa. It is also used for inflammations of the mucous surfaces, such as the lining of the stomach, bowels, throat and urinary passages.

HOPS.

(Humulus Lupulus.)

Action.—Tonic, Narcotic, Sedative, Appetizer.

Uses.—Earache, Pleurisy, Toothache, Nervousness, Sleeplessness, Indigestion, Swellings, Rheumatism, Appendicitis, Inflammations.

Hops are a very good appetizer and nerve quieter and are a good tonic during convalescence from acute diseases like fever. They are good for feeble digestion and are a good nerve sedative. They can be used as a tea or a tincture. The tea is made by using a handful of hops to a quart of water. The dose of the tea is from 2 to 5 ounces. The smaller dose is to be taken as a tonic and the larger as a sedative. For nervousness take 1 or 2 ounces of the tea 3 times a day. For general infusions use from 1 to 4 teaspoonfuls of hops to a pint of water. The dose of the tincture is from 1 to 2 teaspoonfuls 3 or 4 times a day. They are used externally as a fomentation for earache and pleurisy; or, they can be placed in a flannel, moistened with hot whiskey and applied to the painful parts. For earache and toothache it is best to use the fomentation because of the warmth and steam.

In delirium tremens, hop tea with red pepper quiets the craving for drink and settles the stomach. The following combinations are good for nervousness.

Take 3 fluid drams of tincture of hops, 2 fluid drams of tincture of capsicum and 2 fluid drams of glycerine. Give a teaspoonful every hour or two. For sleeplessness and nervousness, mix 2 ounces each of tincture of hops, tincture of ammonia, valerian and spirit of nitrosi ætheris. Give 2 tablespoonfuls in water every hour or two.

Fomentations of hops are best when made with water and vinegar. When hot they are splendid for swellings, pleurisy, rheumatism, appendicitis and wherever anything hot and moist is required.

HOREHOUND.

White Horehound—(*Marrubium Vulgare*).

Action.—Tonic, Laxative.

Uses.—Coughs, Colds, Lung Troubles.

Grows along fences and roadsides and to the height of about a foot. The leaves are deeply notched, wrinkled and are in pairs on long, thick foot-stalks. Plant has an odor somewhat like musk. Flowers are white.

Horehound is generally given as a tea or a syrup. It is splendid for coughs, colds and lung troubles. Horehound candy is good for troublesome coughs.

HORSE CHESTNUT.

(*Æsculus Hippocastanum*.)

Uses.—Piles, Catarrh, Rheumatism, Gangrene, Intermittent Fever.

This tree is commonly known. A decoction made of the bark is good for gangrene when used as a wash. A decoction made of the nuts is good for rheumatism and piles. For local application an ointment may be made by mixing the powdered nuts with lard and this is a fine remedy for piles. A pinch of the powdered nuts or root, when snuffed up the nostrils every night, is good for catarrh. A decoction made of the bark is good for intermittent fever. Use 1½ ounces of the bark to a pint of water, in making the decoction, and take a wineglassful 3 times a day. The dose of the powder is from ⅛ to ½ teaspoonful every 4 hours.

HORSE-RADISH.

(*Cochlearia Armoracia*.)

Action.—Powerful Stimulant.

Uses.—Neuralgia, Rheumatism, Dropsy.

The tea is made by using ½ to 1 ounce of the root to a quart of water. The warm tea is very valuable for neuralgia, rheumatism and dropsy. Horse-radish may be used externally like mustard.

INDIAN TURNIP.

Wild Turnip—Wake Robin—Dragon Root—Jack in the Pulpit—(*Arum Triphyllum*).

Action.—Expectorant, Stimulant.

Uses.—Coughs, Colds, Flatulence, Stomach Cramp, Asthma, Consumption, Rheumatic Pains, Weakness.

It has a tuberous root which sends up in the spring a sheath-like leaf which is flattened and bent at the top like a hood. The sheath has within it a fleshy spike of different colored flowers, round at the top and surrounded at the base by stamens. Later comes a bunch of scarlet berries. Indian turnip

grows in swamps, along ditches and in shady places. The root is the only part used. It is acrid, pungent and even caustic to the tongue. The fresh roots are too caustic to be used internally. The roots must be dried very quickly or buried in sand or earth as they lose their virtue when exposed. They must be used in substance with milk, honey or molasses as liquor does not get their strength. Or, the fresh root may be grated or reduced to a pulp with three times its weight of sugar. This may be taken 3 times a day for colds, coughs, etc. Prepared in this way it is also very good for flatulence, cramp in stomach, asthma and consumption. Good for weakness, great prostration in typhoid, deep seated rheumatic pains and pains in the breast. The dose is from 10 to 15 grains.

IRONWOOD.

(*Astrya Virginica*.)

Uses.—Dyspepsia, Scrofula, Neuralgic Affections, Intermittent Fever.

This tree grows from 10 to 40 feet high. The heart of the tree is very hard and is the part used as medicine. A tea made from the chips of the tree is good for dyspepsia, scrofula, neuralgic affections and intermittent fever. If the fluid extract is used the dose is from $\frac{1}{2}$ to 1 teaspoonful before each meal.

JUNIPER.

(*Juniperus Communis*.)

Action.—Stimulant, Diuretic.

Uses.—Dropsy, Urinary Troubles.

Juniper grows in the U. S. and Europe and attains a height of about four feet. The leaves are long, sharp pointed, of a dark green color and stand together without foot stalks. It flowers in June. The fruit consists of berries which contain 2 or 3 small seeds. The berries are ripe in August of the second year after the flower. To make the tea use 1 ounce of bruised berries to a pint of boiling water. Take during 24 hours. This is good for dropsy of Bright's disease and general dropsy. An overdose produces pain and suppression of urine. One-half ounce of cream of tartar added to 1 pint of the tea of the bruised berries has a good effect. The following combination is also very good. Take 6 drams of acetate of potash, $1\frac{1}{2}$ ounces of compound spirits of juniper berry and $4\frac{1}{2}$ ounces of infusion of broom tops. Mix, and take a tablespoonful 3 or 4 times a day to increase the flow of urine. In making the infusion of the berries alone take 1 ounce of berries to a pint of water. The dose of this is from 2 to 4 ounces, 3 or 4 times a day. The dose of the fluid extract is from $\frac{1}{2}$ to 1 dram and of the spirits, from 1 dram to 1 ounce. This remedy is good for urinary troubles, alone or in combination. It increases the flow of urine and renders it milder.

LADY'S SLIPPER.

Valerian—Nerve Root—Moccasin Flower—Yellow Umbel—(*Cypripedium*).

Action.—Nervine, Anti-spasmodic, Narcotic.

Uses.—Nervousness, Hysteria, Spasms, Fits, Sleeplessness, Nervous Headache.

This plant grows from 1 to 2 feet high and has from 3 to 7 leaves. It is a native of Europe and cultivated in the U. S. The shape of the flower is a singular, hollow, bag-like form, open at the top, and compared by some to a moccasin. The Indians called it "moccasin flower."

It is a nervine and gives tone to the nervous system. It is good for nervous irritation, hysteria, spasms, fits, sleeplessness, nervous headache and all other forms of nervousness. The roots are the only part used. They should be gathered in the spring before the tops begin to grow much or in the fall after they begin to die. Carefully separate after digging, wash clean and dry in the sun or in a dry airy room; then pack them away in a dry box or powder them and bottle for use. The dose of the powdered root is from $\frac{1}{2}$ to 1 teaspoonful. The decoction is made by using 1 ounce of the root to a quart of boiling water. The dose of the decoction is from $\frac{1}{2}$ to 1 ounce and may be repeated as often as necessary. The dose of the tincture is from 1 to 2 teaspoonfuls.

The following combination is good. Mix 1 ounce each of tincture of common valerian, tincture of hops and sweet spirits of nitre and take 2 teaspoonfuls in water every hour or two for sick or nervous headache which is not caused by an acid stomach. Take $\frac{1}{2}$ ounce each of powdered catnip, skullcap and yellow lady's slipper; pour on a pint of boiling water and infuse for 15 or 20 minutes. The dose is 1 fluid ounce of the warm infusion at once, after which $\frac{1}{2}$ ounce should be taken every half hour for 3 or 4 hours or until the headache ceases. Use this for 3 or 4 attacks of headache and a permanent cure is often effected.

LAUREL.

Mountain Laurel—Spoon-wood—Lambkill—Calico Bush—(*Kalmia Latifolia*)—(Poison).

Uses.—Ringworm, Itch, Skin Diseases, Catarrh.

Laurel is a shrub and grows from 4 to 10 feet high. The leaves have a bitter taste and are evergreen. They are of an oval lance shape and pointed at both ends. This shrub has beautiful rose colored flowers which are somewhat the shape of a cup. It is found growing on hills and mountains. The fresh wood is soft but when dry it is very hard.

Used externally. For ringworm and similar eruptions an ointment is made of the powdered leaves and lard. For itch and other skin diseases, a good wash is made of the decoction. For catarrh, the powdered leaves are used as a snuff. It is a powerful and dangerous medicine when taken internally.

LEMON.

(*Citrus Limonum*.)

Action.—Diaphoretic, Antiscorbutic, Stomachic.

Uses.—Colds, Scurvy, Stomach Troubles, Tan, Etc.

The lemon is a native of Asia. Small doses of the juice have a stimulating effect upon the stomach and aid digestion. An excellent drink for allaying thirst is made by using the juice of one lemon to a pint of water and sweetening with sugar. Hot lemonade is valuable for producing sweating and breaking up colds. Lemons are one of the best remedies known for scurvy. By some they are used for rheumatism and malarial fevers. As a wash the juice is good for removing tan from the face and hands.

LETTUCE.

(*Lactuca Sativa*.)

Action.—Sedative, Nervine.

Uses.—Sleeplessness, Nervous Diseases, Allaying Pain of Rheumatism and Colic, Coughs, Diarrhea.

When used as a diet, lettuce will be found of value in the treatment of many nervous complaints. It is a sedative in its action and is conducive to sleep. It contains a milky juice which has an odor and taste which is somewhat like opium. Lettuce is good for allaying the pain of colic and of chronic rheumatism and is also good for coughs and diarrhea. Lactucarium is a preparation made from the juice and the dose is from 3 to 5 grains.

LILY OF THE VALLEY.

(*Convallaria Majalis*.)

Action.—Errhine, Cathartic.

Uses.—Palpitation, Heart Troubles, Urinary Diseases, Dropsy, Bright's Disease.

Its root is about the size of a quill. The flowers are the part used. They are bell shaped, six lobed, and possess a fragrant odor and a bitter acid taste.

In small doses it strengthens the heart action. The larger doses lessen the activity of the heart. It relieves palpitation and difficult breathing, increases the flow of urine, reduces dropsy and is good for chronic Bright's disease. The following is a good combination for general dropsy from heart and kidney disease. Take $1\frac{1}{2}$ drams of fluid extract of lily of the valley, $\frac{1}{2}$ ounce of bitartrate of potash and enough simple syrup to make 4 ounces. Take a tablespoonful 3 or 4 times a day. For valvular insufficiency and functional heart disease the following will be found good. Mix 2 drams of fluid extract of lily of the valley with enough syrup of orange peel to make 2 ounces and take from a teaspoonful to a tablespoonful 3 times a day. In making a tea of the flowers use one part of the flowers to 3 parts of water and take from $\frac{1}{2}$ to 2 ounces 3 or 4 times a day.

LIVERWORT.

Noble Liverwort—Liver Leaf—(*Hepatica Triloba*).

Action.—Demulcent, Tonic.

Uses.—Liver Troubles, Indigestion.

The leaves of liverwort live through the winter and they resemble clover leaves. The flowers appear very early in the season and are small and white. They droop at first but spread out as they unfold.

The plant is used a great deal for liver complaints and indigestion. It is given as a tea, either warm or cold, and may be drank freely.

LOBELIA.

Indian Tobacco—Wild Tobacco—Poke Weed—Emetic Herb—Asthma Weed—(*Lobelia Inflata*).

Action.—Emetic, Diaphoretic, Expectorant.

Uses.—Asthma, Stings, Spasms.

This plant grows in abundance by the road and in stubble fields. The first year it throws out a few roundish leaves and the next year it produces the stem, branches and seeds. It has an erect, hairy stem with blue flowers in the axils of the leaves. The capsule out of which the flower grows contains two cells and is very full of small black seeds. A powder is made of the seeds. In making lobelia tea use an ounce of the leaves, seeds and pods to a pint of water. The dose of this for asthma is from 1 to 2 teaspoonfuls every 10 minutes until the patient is sick at the stomach. The dose of the powder is from 1 to 5 grains; 10 to 20 grains act as an emetic. The dose of the tincture is

10 drops every 10 minutes, for asthma, and should be continued until a little nausea is produced. For emetic action it is too severe. Only enough should be given to produce sickness at the stomach. This is a very active remedy and should be given carefully. Poultices of powdered lobelia and slippery elm bark with weak lye water are very good for bites and stings of poisonous insects, spasms and pains of the limbs, and to produce muscular relaxation.

MANDRAKE.

May Apple—Indian Apple—(*Podophyllum Peltatum*).

Action.—Cathartic, Alterative, Cholagogue.

Uses.—Constipation, Jaundice, Dyspepsia, Liver and Bowel Troubles, Sick Headache.

This plant grows in the U. S. and Canada. It branches into 2 stems, each bearing on its top two large umbrella-like leaves. The flowers are yellowish and produce a large fruit which is called yellow may apple and is somewhat like a lime in appearance. It grows on uplands and in meadows and woods. The root is sometimes as large as the little finger.

It is good for constipation. As a cathartic, give from 5 to 20 grains of the powdered root. It is slow in action. In chronic cases, as an alterative, give from 1 to 3 grains twice a day. The dose of mandrake bought in drug stores is from $\frac{1}{8}$ to 1 grain and should be given at night. It is also good in jaundice and dyspepsia which are dependent upon a deficient secretion of the liver and bowel glands. For these use small doses; 1 grain of the powdered root or $\frac{1}{2}$ grain of the resin 3 or 4 times a day. This remedy relieves sick headache which is associated with loose and dark colored stools. The dose of the resin is $\frac{1}{8}$ grain night and morning; of the powder, 1 grain every 2 hours for a few days; and of the fluid extract, from 1 to 30 drops.

MARIGOLD.

(*Calendula Officinalis*.)

Uses.—Cuts, Wounds, Sprains.

It is hard to make an infusion from this plant and it is better to get the medicine from a homeopathic pharmacy.

It is the best remedy known for cuts and wounds in either man or beast. It may be applied full strength after first thoroughly cleansing the wound. Saturate clean linen cloth, put on the cut and tie. Re-dress as necessary. It is good in combination with arnica for sprains but is better for cuts and torn wounds. Every family should keep calendula water and tincture in the home. An infusion may be made by using about 2 ounces of the leaves and flowers to a pint of boiling water. This is for external use only.

MARSHMALLOW.

Mortification Root—(*Althæa Officinalis*).

Action.—Demulcent.

Uses.—Mortification, Inflammatory Swellings, Cankered Mouth, Sore Throat, Hoarseness, Catarrh, Gonorrhea, Bladder Troubles.

Grows in the U. S. along the banks of rivers and in marshy places. Has smooth, downy, heart shaped leaves and large, single, light rose colored flowers with beautiful tracery of a bluish color.

It is used to prevent mortification (gangrene) when threatened. It is also

applied to inflammatory swellings. Bruise the root after it is cut into small pieces and boil in milk. Slippery elm may be added if desired. Apply warm and renew often. For the infusion use from $\frac{1}{2}$ to 1 ounce of the root to a quart of water and boil down to a pint. It is good when applied locally for cankered mouth and as a gargle for sore throat. The syrup is good for coughs when used freely. It is also good for hoarseness, catarrh, gonorrhea and irritated bladder with painful urination. It is also used externally as a poultice.

MILK WEED.

Silk Weed—(Asclepias Cornuti).

Uses.—Dropsy, Catarrh, Rheumatism, Sores, Gravel, Retention of Urine, Coughs, Asthma, Scrofula.

Bears purplish-white flowers in July and August. Gives out a milky juice when bruised. This is a well known plant which is very common in the U. S. It is valuable for dropsy, catarrh, rheumatism and sores. For the decoction, boil from 4 to 8 ounces of the dried root in 6 quarts of rain water. Take from 2 to 4 ounces at a dose 4 times a day for dropsy and rheumatic affections.

When the green plant is bruised and applied locally it is good for sores and ulcers. The roots put into gin may be used for dropsy and gravel. Good for retention of urine, coughs, asthma, scrofula and rheumatism. The dose of the powder is from 10 to 20 grains; of the decoction, from 2 to 4 ounces and of the tincture, from 10 to 60 drops.

MOTHERWORT.

(Leonurus Cardiaca.)

Action.—Anti-spasmodic, Diaphoretic.

Uses.—Menstrual troubles, Hysteria, Sweating.

This valuable plant grows in the U. S. and has a strong, hard, square, brownish stalk from 2 to 4 feet high which spreads into many branches. The leaves are broad and long and notched about the edge and there are two at each joint. From the middle of the branches to the tops the flowers grow round about them in sharp, pointed, rough, prickly husks or burrs of a red or purple color. Grows in fields and pastures and flowers from May to September.

It is an excellent anti-spasmodic and is good for monthly sickness and as a cordial for sweating. The dose of the powder is a tablespoonful. The tea is made by using 2 ounces to a quart of water and it may be drank freely and often. The decoction should be boiled from a quart down to a pint. The dose of the decoction is from 1 to 2 tablespoonfuls every 1 to 3 hours. It is used for menstrual troubles where there is much pain. Also used for hysteria and for sweating.

MULLEIN.

(Verbascum Thapsus.)

Action.—Emollient.

Uses.—Earache, Diarrhea, Painful Urination, Piles, Scalds, Wounds, Sprains, Swellings, Ulcers, Lumps, Sore Throat, Tonsilitis, Mumps, Sore Eyes.

The warm oil is splendid for earache. Drop into the ear and insert cotton. The tea is made by boiling 4 ounces of fresh, or 6 ounces of dry leaves, in a pint of fresh milk for 10 minutes. Drink this quantity 3 times a day for coughs, dysentery or piles. Also good for diarrhea and painful passing of urine. Good wash for piles and scalds and for wounds in cattle. A poultice of the pulp and

leaves is good for sprains and swellings. The leaves boiled in vinegar and water are good for sores and ulcers. Weak mullein tea is good for weak and sore eyes. Fomentations of the leaves are good for external piles, ulcers and lumps. The leaves infused in hot vinegar or water are very good when applied to the throat for sore throat, tonsilitis and mumps. The flowers placed in a tightly corked bottle and exposed to the sun's action are said to yield a fine relaxing oil.

MUSTARD.

White Mustard and Black Mustard—(*Sinapis Nigra* and *Sinapis Alba*).

Action.—Emetic, Irritant, Stimulant, Epispastic, Rubefacient.

Uses.—Liver and Stomach Troubles, Neuralgia, Headache, Sleeplessness, Amenorrhea, Lumbago, Colic, Croup, Sciatica.

This is a warm stimulating medicine when something is needed to liven the stomach. A poultice made with mustard alone or with horseradish leaves mixed with vinegar, bread crumbs and white of eggs, makes a fine application for neuralgia. Do not let it stay on long enough to blister but just to redden the parts. This is good whenever it is desired to draw the blood to the surface or away from the congested parts as in convulsions and lung troubles. This is also especially good on the back of the neck for headache and neuralgia. Never put it on the feet, or at least not for a very long time or you will have a long resting spell as you will be unable to walk. Mustard may be used in water, though, as a foot bath when it is desired to draw the blood from the brain in case of sleeplessness, amenorrhea or headache. A handful of ground mustard is the amount to be added to the bath. Poultices and plasters should remain on from 10 to 15 minutes only. Mustard water is used as an emetic for poisoning. Mustard leaves may be bought at the drug store and are splendid for neuralgia, headache, lumbago, colic, croup, sciatica, etc. Dampen them with cold water before applying. They are better than the poultice and should be kept on for from 5 to 10 minutes. The dose of mustard as an emetic is from 1 to 3 teaspoonfuls in 6 to 8 ounces of warm water. Mustard applied locally is good for pains almost anywhere.

NETTLE.

Great Stinging Nettle—(*Urtica Dioica*)—(*Urtica Hispid*a).

Action.—Astringent, Tonic, Diuretic.

Uses.—Diarrhea, Dysentery, Piles, Scurvy, Gravel, Kidney Troubles, Bowel Troubles, Bleeding.

Use the roots or leaves. The plant is a dull green and armed with very small rigid hairs or prickles. The stem is from 2 to 4 feet high. The flowers are green and in branching, clustered, axillary, interrupted spikes. The plant is common in Europe and the U. S. It grows in waste places and flowers from June to September. A decoction of the plant, made by using 1 ounce of the plant to a pint of water, when strongly salted, will coagulate milk as readily as rennet without imparting to it any unpleasant flavor.

It is astringent, tonic and diuretic. It is valuable in diarrhea, dysentery, piles, scurvy and in gravel and other kidney troubles. A strong syrup of the root of the nettle combined with wild cherry and blackberry root is excellent for all summer complaints of children and bowel affections of grown people. The leaves, when applied to bleeding surfaces, are good to stop the flow of blood. The dose of the powdered root or leaves is from 20 to 40 grains and of the decoction, from 2 to 4 fluid ounces 3 or 4 times a day.

ONION.
(*Allium Cepa*.)

Action.—Expectorant, Sedative, Stimulant, Diuretic, Rubefacient.

Uses.—Croup, Laryngitis, Earache, Coughs, Bronchitis, Eczema, Inflammations.

The action of onion as an expectorant is similar to the action of garlic but onions are not so strong and are pleasanter to take. They are also used as poultices. In large doses they cause stomach uneasiness and flatulence. When used as a poultice they are very fine for croup, laryngitis and earache. Added to sugar and water they are good as a cough syrup. Boiled Spanish onion eaten at night is an excellent laxative. Raw onion applied locally is very good for inflammations and especially if a little salt is added. Onion syrup is good for chronic bronchitis. For chronic eczema the following is good. Take equal parts of syrup of Spanish onion and syr. phosphate compound. Give 1 or 2 teaspoonfuls in water or milk 3 or 4 times a day. Milk helps to take away the smell after eating.

PARSLEY.
Rock Parsely—(*Petroselinum*).

Action.—Diuretic, Aperient.

Uses.—Female Troubles, Urinary Troubles, Gonorrhea, Dropsy, Vermin, Swollen Breasts, Enlarged Glands, Bruises, Bites and Stings.

This is a very common plant, about 2 feet high and bearing small yellow flowers. A poultice is made from the bruised leaves. The fresh root is best for the tea. The tea is made by using an ounce of the root to a pint of water and the dose is from $\frac{1}{2}$ to 2 ounces taken hot. It is good for amenorrhea, or no menses, and dysmenorrhea, or painful menses. It is also good as a diuretic in dropsy, retention of urine and painful urination and is also good for gonorrhea. The dose is $\frac{1}{2}$ ounce every 2 to 4 hours. It is good for dropsy following scarlet fever and other eruptive diseases. The seeds and leaves sprinkled on the hair will destroy vermin. Fomentations of the leaves are applied for bites and stings of insects. The bruised leaves are good for bruises, swollen breasts and enlarged glands. The dose of the oil as a diuretic is 5 drops 3 or 4 times a day. The tea is made by using an ounce of parsley to a pint of water. The dose is from 2 to 4 ounces 3 or 4 times a day.

PARTRIDGE BERRY.
Squaw Wine—Checker Berry—Winter Clover.

Action.—Tonic, Alterative.

Uses.—Womb Troubles, Painful Labor, Sore Nipples, Dropsy, Suppression of Urine, Diarrhea.

This is an indigenous evergreen herb with a perennial root from which arises a smooth and creeping stem. The stem is furnished with rounded, ovate, or slightly heart shaped, dark green, shining leaves usually variegated with whitish lines. It is somewhat like clover and bears one flower and one white-winged red berry in a place. It is indigenous to the U. S., growing in dry woods among hemlock timber and in swampy places. Flowers in June and July. The whole plant is used.

The Indian women drank a tea made of this plant for weeks before labor to make it easier. It seems to have a special action on the womb. Tonic and alterative. A strong decoction is made by using 2 ounces of the plant to a

COMMON HERBS USED AS MEDICINES.



Liverwort or Hepatica.
Used for Liver Troubles, Indigestion, etc.



Beth Root or Nodding Wake-Robin.
Used for Female Troubles, Diarrhea, Dysentery, Tumors, Ulcers, Carbuncles, Bleeding, etc.



Black Cohosh or Squaw Root.
Used for Female Troubles, Asthma, Nervous Excitement, Epilepsy, Convulsions, Whooping Cough, Rheumatism, etc.



Lobelia or Indian Tobacco.
Used for Asthma, Stings, Spasms, and as an Emetic for Croup, etc.



Pennyroyal.
Used for Suppressed Menses, Whooping Cough, Colds, Colic, etc.



Poison Hemlock.
Used for Rheumatism, Lumbago, Sciatica, Piles, Sore Throat, Leucorrhea, Falling of Womb and Menstrual Troubles.

pint of water. The dose is 2 or 3 ounces 2 or 3 times a day. It is also good for dropsy, suppression of urine and diarrhea. For sore nipples take 2 ounces of the herb, fresh if possible, and make a strong decoction with a pint of boiling water. Strain and add as much cream as there is liquid in the decoction and boil the whole down to the consistency of a soft salve and when cool anoint the nipples after each nursing.

PEACH TREE.

(*Amygdalus Persica.*)—(*Prunus Persica.*)

Action.—Tonic, Vermifuge, Laxative, Sedative.

Uses.—Constipation, Worms, Urinary Troubles, Debility, Leucorrhea.

The dried fruit stewed with sugar is good for constipation. A cordial or tincture may be made of peach pits. It is a tonic and is also good for worms. Take a handful of the leaves and blossoms or the blossoms alone, steep in 1 pint of boiling water and give freely and repeatedly in small doses of from $\frac{1}{4}$ to $\frac{1}{2}$ teaspoonfuls and follow with a purge. This usually brings the worms away from children. It is also good for urinary obstructions. Peach pits tinctured in brandy in the proportion of 4 ounces of pits to a quart of brandy form a powerful tonic in all cases of debility. It is also good for leucorrhea. The dose is a teaspoonful 3 times a day.

PENNYROYAL.

(*Hedeoma Pulegioides.*)

Action.—Carminative, Resolvent, Anti-spasmodic, Emmenagogue, Diaphoretic, Expectorant.

Uses.—Female Complaints, Whooping Cough, Colds, Colic.

Has small, fibrous, yellowish, annual root; upright stem with slender erect branches; leaves, small, rough and oblong and pale beneath; and small, white flowers, with purple edges, along branches.

Its action is carminative, resolvent, chest sweater, anti-spasmodic and stimulant to the menses. It is very good for female complaints such as suppressed menses, hysterics, etc. It is then given as a sweetened hot tea and fomentations are used over the womb. It promotes expectoration in whooping cough and it is good for pains in the hips and few menses. Good for colds and colic in children and warms the stomach and causes sweating. Make a strong hot tea and take it frequently. Do not use oil of pennyroyal as it is dangerous when used to bring on the menses. Pennyroyal is a protection against mosquitoes. Place the fresh herbs around the room and bathe the hands and face with the tea.

PEPPERMINT.

(*Mentha Piperita.*)

Action.—Carminative, Aromatic, Stimulant.

Uses.—Nausea and Vomiting, Hysterics, Colic.

Very common in wet lands. It is hot and pungent and the strongest of all mints. Has a well-known odor.

It is useful to check nausea and vomiting, to relieve hysterics and to prevent the griping effects of cathartics. Much used for colic in children. Bruised and applied externally to the stomachs of children it is good to allay sickness and vomiting. The tea is made by using an ounce of the herb to a quart of boiling water. The dose is from 1 dram to 1 ounce and may

be taken frequently. The dose of essence for an adult is from 5 to 60 drops in hot sweetened water. The dose of oil of peppermint is from 1 to 5 drops in hot water.

PINK ROOT. (*Spigelia*.)

Action.—Vermifuge.

Uses.—Worms.

This is good in combination with senna for round worms. (Pink and Senna.) The following combination is also good for worms. Take $\frac{1}{2}$ ounce of pink root, 2 drams of senna, 2 drams of fennel seed, 1 ounce of manna and a pint of boiling water. The dose for a child is from 1 to 2 tablespoonfuls and for an adult from 1 to 2 wineglassfuls. The dose of powdered pink root for a 3-year-old child is from 10 to 20 grains and the dose of strong pink root tea is from 1 to 2 ounces at bed time. This should be followed in the morning by a cathartic.

PLANTAIN.

Large Plantain—Round Leaved Plantain—(Plantago Major).

Uses.—Bleeding, Ivy Poisoning, Burns, Scalds, Bruises, Erysipelas, Toothache; Bites of Insects, Spiders and Snakes.

The fresh leaves ground to a paste in a mortar and applied to wounds will check bleeding. Good, also, for ivy poisoning, burns, scalds, bruises and even erysipelas. For toothache apply the bruised leaves of the cheek and the paste to the tooth. The juice taken internally, 1 ounce every hour, and also applied to the wound is good for bites of insects, spiders and snakes.

PLEURISY ROOT.

Butterfly Weed—White Root—Orange Swallowwort—(Asclepias Tuberosa).

Action.—Diaphoretic, Expectorant.

Uses.—Pleurisy, Colds, Acute Rheumatism, Diarrhea, Dysentery, Measles.

Generally grows in poor soil. The root is large, fleshy, whitish, and when dried is brittle. The stems are round, hairy and green or red. The leaves are very hairy and pale beneath. The flowers are of a bright orange color. The seeds are in the long, slender pods to which is attached a kind of silk. It is used as a tea and a powder. The dose of the powder is from $\frac{1}{4}$ to $\frac{1}{2}$ teaspoonful 3 times a day.

For pleurisy, use the tea. It is made with 1 ounce of root to a pint of water. The regular dose is from 1 to 2 ounces. Give $\frac{1}{2}$ ounce every 2 hours for pleurisy, colds and acute rheumatism. Good as a sweater and to bring out the eruption of measles, etc. The dose of the tincture is from $\frac{1}{2}$ to 1 dram. Pleurisy root is good for diarrhea and dysentery, either as a tea or tincture. A good combination is made by taking 2 ounces of pleurisy root, 1 ounce of brandy and 3 ounces of syrup of raspberry. The dose is from 1 to 4 drams every hour or two for diarrhea and dysentery.

POKE ROOT.

Poke Weed—Pigeon Berry—Garget—Coakum—(Phytolacca Decandra).

Uses.—Caked Breasts, Abscess of Breasts, Sore Throat, Tonsilitis, Chronic Skin Diseases, Chronic Rheumatism, Syphilis.

This plant is commonly known. Nearly every child has made ink of the berries and a description is not necessary. The root should be gathered late in the fall. Put the leaves into boiling water to extract the medicinal qualities. Can make a tincture of this and the root. It is very cheap and it is best to buy either the tincture or fluid extract for external use.

It is excellent for caked breasts. Make and apply a poultice of the root and it is well at the same time to take either the tincture or the fluid extract internally. The dose of the fluid extract is 2 drops every hour or two and the dose of the tincture is 5 drops every hour or two. It is very good for sore throat, tonsilitis, chronic skin diseases and abscess of the breast. A tea may be made and used instead of the tincture or fluid extract. In chronic diseases the dose of the fluid extract is from 5 to 30 drops; of the tincture, from 10 to 60 drops and of the powder from 1 to 5 grains. These doses should be taken 4 times a day. It is good for syphilis and chronic rheumatism when in combination with other blood remedies such as iodide of potash. Use 8 grains of iodide of potash to each fluid ounce of poke root syrup.

PRICKLY ASH.

Yellow Wood—Toothache Tree—(*Xanthoxylum Fraxineum*).

Action.—Stimulant, Tonic, Alterative.

Uses.—Chronic Rheumatism, Colic, Syphilis, Liver Troubles, Blood Diseases.

Grows from 10 to 12 feet high. The branches are covered with prickles; leaves are alternate and pinnate; flowers are near the origin of the young branches and are small and greenish and appear before the leaves and each fruitful flower is followed by capsules. The capsules are oval and covered with excavated dots, varying from green to red, two valved and one seeded. The seeds are oval and blackish. Grows in Canada and the United States. Flowers in April and May.

It is a stimulant, tonic and alterative. Useful in chronic rheumatism, colic, syphilis and liver troubles. Combined with blue flag and mandrake, it is good for scrofulous, syphilitic and other blood diseases when given frequently and in small doses. The dose of the powder is from 5 to 10 grains a day. This is a very good blood remedy and especially when in combination with poke root, burdock, red clover, blue flag, mandrake, etc.

PUMPKIN SEED.

(Pepo.)

Uses.—Tape Worms, Suppression of Urine.

For tape worms eat a lot of the shelled seeds at night. Follow in the morning with rochelle salts and castor oil. The following is a good combination. Take 1 dram of oleoresin aspidium, 10 drops of chloroform and 12 ounces of emulsion of pumpkin seeds. Divide this amount into 2 doses to be taken an hour apart and followed by rochelle salts an hour later. The seeds can be crushed and beaten into a paste with milk and sugar and then strained; or, water and milk may be used. Fast, clean out the bowels, and then take at night and follow in the morning with castor oil or rochelle salts. Pumpkin seeds are one of the very best remedies known for expelling tape worms. They are also good for suppression of the urine. Pumpkin seed tea is very good for either children or adults. Adults can eat the shelled seeds.

QUEEN OF THE MEADOW.

Purple Boneset—Joe Pye Weed—Gravel Root—(Eupatorium Purpureum).

Action.—Resolvent, Tonic, Diuretic.

Uses.—Gravel, Stone Colic, Dropsical Affections, Urinary Troubles.

This medicine was frequently used by the Indians for gravel and stone colic. The plant is herbaceous with a perennial, horizontal, woody caudex with many long, dark brown fibers which send up one or more solid, green, sometimes purplish, stems, 5 to 6 feet high with a purple band about an inch broad at their joints. The leaves are feather veined and from 3 to 6 in a whorl and about 6 inches apart. They are from 8 to 10 inches long and 4 to 5 inches wide and are thin. The flowers are purplish white with purple stems. Grows in swamps and low grounds from Canada to Virginia and flowers in August and September. The root is the part used.

It is slightly tonic. Splendid in dropsical affections, difficult and painful urination, chronic urinary trouble, gravel and stone in bladder, stone colic, etc. For the decoction use an ounce of the root to a pint of water. The dose is from 2 to 4 ounces 3 or 4 times a day. The dose of the tincture is from 5 to 20 drops. This is an excellent remedy.

QUEEN'S DELIGHT.

Queen's Root—Yaw Root—(Stillingia).

Action.—Emetic, Cathartic, Alterative.

Uses.—Blood Diseases, Syphilis, Scrofula, Piles, Liver Troubles, Jaundice, Constipation, Dropsy.

Usually grows in dry and open woods in Europe and the United States. Has a large, thick, woody root and a light-colored stem and grows from 2 to 3 feet high. The leaves are oblong, taper somewhat at both ends and are bordered with very small teeth. Bears a spike of yellow flowers. Plant, when broken, discharges a milky juice.

The bark of the fresh root is a great blood remedy. Is good for syphilis, scrofula, piles and liver disorders such as jaundice and constipation from torpid liver. It is good in the first stages of hardened liver and its result, dropsy of the bowel. Good in combination with other plants and iodide of potash, for blood diseases. The following is a good combination. Take 1½ ounces of tincture of stillingia, 1 ounce of poke root, 1 dram of nux vomica and 5 ounces of prickly ash. Give 2 teaspoonfuls in water 3 or 4 times a day for syphilis and scrofula. For the decoction use 1 ounce to a quart of boiling water. The dose is from 1 to 2 ounces 3 or 4 times a day. In decoction it should be taken for a long time for blood diseases.

ROOT PARSLEY.

(Apium Petroselinum.)

Action.—Diuretic. Aperient.

Uses.—Dropsy, Kidney Troubles, Urinary Troubles, Gonorrhea, Vermin, Bites and Stings, Contusions, Swelled Breasts, Enlarged Glands.

Native of Europe but is cultivated in gardens. The whole plant has an aromatic odor and the leaves are used for culinary purposes. Rises about 2 feet and bears small yellow flowers. The root is the best and should be gathered and used fresh.

It is a diuretic and acts upon the kidneys. It is very useful in dropsy

following scarlet fever and other eruptive diseases. It is also good for retention of water, painful urination and gonorrhea. The seeds and leaves powdered and sprinkled on the hair, or used as an ointment, will destroy vermin. The leaves when applied as a fomentation aid in curing bites and stings of insects. When bruised they are good applied to contusions, swelled breasts and enlarged glands. The tea is made by using 1 ounce to a pint of water. The dose is from 2 to 4 ounces 3 or 4 times a day. The seeds are rather poisonous.

RED CLOVER. (*Trifolium Pratense*.)

Uses.—Blood Diseases, Whooping Cough, Scrofula, Syphilis, Chronic Rheumatism, Skin Diseases, Ulcers.

A description is not needed. For the tea use a handful of clover tops to a pint of water and give 1 or 2 drams at a dose. Taken frequently it is good for whooping cough. Taken alone or in combination it is also good for blood diseases such as scrofula, syphilis, chronic rheumatism and skin diseases. A syrup is also made and used internally. May be taken freely. Good for sores and ulcers when freely applied. Often used in combination with other blood remedies. The following is a good plaster for ulcers. Take 4 pounds of red clover blossoms and 1 pound of the roots, or roots and tops, of narrow dock. Boil in water until the strength is out, then separate the clover and dock from the liquid, carefully pressing out all the juice, and return it to the kettle and continue the boiling, using the utmost care to prevent burning, until reduced to a salve or paste.

RHUBARB. (*Rheum*.)

Action.—Astringent, Cathartic, Tonic.

Uses.—Bowel Complaints.

Scorch, or rather roast, but not burn, some powdered rhubarb and put 1 ounce into a pint of brandy or blackberry wine with enough essence of cinnamon to give it a good flavor and then sweeten with loaf sugar. A teaspoonful or more for children is a very good remedy in bowel complaints. Spiced syrup of rhubarb is also an excellent remedy for bowel troubles in children and is pleasant to take. The dose is from 1 to 4 teaspoonfuls.

SAFFRON.

True Saffron—Spanish Saffron—(*Crocus Sativus*).

Action.—Stimulant, Emmenagogue.

Uses.—Chlorosis, Hysteria, Spasms, Stomach Troubles, Eruptive Diseases, Menstrual Troubles.

The root is a small bulb upon a larger root with a great number of fibres growing from the base. Four or five grassy leaves about 5 inches long rise from the root and from this root there arises a stalk about 4 inches high bearing a single flower resembling a crocus. The leaves are long, grassy, and of a dark green color. The flowers are the part used.

Saffron tea made from the flowers is good to bring out the eruption of measles, scarlet fever and other eruptive diseases. It is also good for the pains in the back accompanying menstruation. Good for hysteria, chlorosis

and to increase the flow of urine. Gives tone to the stomach and is also good for spasms.

SAGE. (*Salvia*.)

Action.—Tonic, Astringent, Stimulant, Condiment.

Uses.—Summer Complaints, Worms, Colds, Sore Mouth, Sore Throat, Night Sweats.

The tea is made by using from 4 to 8 ounces of sage to a pint of boiling water and the dose is from 1 ounce to a wineglassful. It is a tonic, astringent and stimulant. Good for summer complaints and worms in children. For colds it should be taken hot and freely. Good for checking the night sweats of tuberculosis. The following is the combined sage gargle. Take 4 ounces of alum, 1 ounce of sage, 2 fluid ounces of strained honey and 1 pint of boiling water. It is used locally for sore mouth or it may be diluted with water and used as a gargle for sore throat. Sage, honey and borax is also good for sore mouth. Sage and honey are good for sore throat. Make it strong enough to suit the taste. Sage tea alone is good as a gargle for sore mouth and throat or it may be combined with vinegar and pepper. Use from $\frac{1}{2}$ to 1 ounce of sage to a pint of vinegar and a pinch of pepper.

SARSAPARILLA. (*Aralia Nudicaulis*.)

Action.—Stimulant, Tonic, Diaphoretic.

Uses.—Chronic Rheumatism, Blood Diseases, Syphilis, Scrofula, Chronic Skin Diseases.

Found in abundance along the Ohio River. The best is imported and can be bought at drug stores. The root is the part used.

It is good for chronic rheumatism, syphilis, scrofula and chronic skin diseases. It is excellent to cleanse the blood. It is especially good in combination. The following is the compound decoction of sarsaparilla. Take 10 parts of sarsaparilla, 2 parts sassafras, 2 parts guaiac wood, 2 parts of licorice root, 1 part of leatherwood and 83 parts of water. The dose is from 1 to 4 ounces. It is also good in combination with iodide of potash. Take $\frac{1}{2}$ ounce of compound syrup of iodide of potash, 3 ounces of syrup of sarsaparilla compound and 3 ounces of distilled water. Give $\frac{1}{4}$ ounce in a glass of water two hours after meals for syphilitic skin affections.

SASSAFRAS. (*Laurus Sassafras*.)

Action.—Mucilaginous, Sudorific, Stimulant, Astringent, Aromatic.

Uses.—Rheumatism, Kidney Troubles, Corrosive Poisons, Old Sores. Inflammation of the Eyes, Eruptive Diseases.

The wood, root and bark are used. Use 1 ounce of sassafras to a pint of water in making sassafras tea. The dose is from 2 drams to an ounce. The dose of oil of sassafras is from 1 to 4 drops. The tea is good for rheumatism. It should be used hot and should be taken for a long time. Also good for kidney troubles. The tea is a good mucilaginous or soothing drink to be used after corrosive poisoning. Use 2 parts of sassafras to 100 parts of water and drink freely. Take the pith of the wood and make a salve

for old sores. A good wash for inflamed eyes is also made from the pith. Hot sassafras tea is good to bring out the eruption of eruptive diseases.

SCOURING RUSH.

Shave Grass—Horse-tail—(*Equisetum Hyemale*).

Action.—Diuretic, Astringent.

Uses.—Dropsy, Gravel, Urinary Troubles, Kidney Diseases, Gonorrhea, Gleet, Acid Dyspepsia.

This is a perennial plant with simple, stout, erect, jointed and hollow stems growing from 2 to 3 feet high, each stem bearing a terminal ovoid spike. Frequently 2 or more stems are united at the base to the same root. The fruit is arranged in whorls. From 4 to 7 spiral filaments surround the spores, which resemble green globules, and roll up closely around them when moist and uncoil when dry. Grows in the northern and western parts of the United States on wet grounds and matures in June and July.

It is diuretic and astringent. The tea drank freely has been found useful in dropsy, suppression of urine, blood in urine, gravel and kidney diseases. It is also good for gonorrhea and gleet. The ashes of the plant are good for acid dyspepsia. The dose of pulverized ashes is from 3 to 10 grains 3 or 4 times a day. For the tea use an ounce to a pint of water. The dose is from 1 to 2 ounces 3 or 4 times a day.

SENECA SNAKE ROOT.

Milkwort—Mountain Flax—(*Polygala Senega*).

Action.—Stimulant, Diuretic, Expectorant, Emetic, Purgative.

Uses.—Snake Bites, Coughs, Pleurisy, Asthma, Cramps, Croup, Female Obstructions.

The root is firm, hard, branching, crooked and woody. There are many stems and they are smooth and occasionally tinged with red. Grows from 8 to 12 inches high. The leaves are numerous and alternate or scattered. They are long, narrow and bright green on the upper and pale on the under side. The flowers are white and in a close terminal spike. The spike opens gradually, so that the lower ones are in fruit while the upper ones are in bloom. Grows in the northern parts of the United States on the sides of hills and in dry woods.

Was considered by the Indians an antidote for snake bites. It is stimulant, diuretic, expectorant, emetic, purgative. Is good for coughs, pleurisy, asthma, cramps, and female obstructions. It is used as a tea, powder or syrup. The dose of the powdered root is from 10 to 20 grains every 3 hours. For croup of children use a decoction made by using an ounce of the root to a pint of boiling water. The dose is a teaspoonful every half hour until it acts as an emetic and cathartic. The dose of the tea for adults is from $\frac{1}{2}$ to 2 ounces 3 or 4 times a day for the above troubles.

SENNA.

Action.—Purgative.

Uses.—Constipation.

Senna increases the action of the bowels and causes free elimination. It has some action on the liver also. It is used in the form of a tea made from the leaves. Senna is one of the ingredients of Rocky Mountain Tea,

Lane's Tea, Garfield Tea and Syrup of Figs. Senna is frequently used in combination with other remedies. It is a safe and sure cathartic but sometimes causes griping pains and sickness at the stomach when used alone.

SHEEP SORREL.

(*Rumex Acetosa*.)

Action.—Refrigerant.

Uses.—Tumors, Ulcers, Old Sores, Cancers, Inflammations.

This plant is too common to need description. To make a poultice wrap the leaves and roast them and apply to tumors and inflammations. It will hasten the healing. The following is also good. Take sheep sorrel, bruise and press out the juice, place it on plates and dry in the sun until of the proper consistency for a plaster. Apply on white paper or a soft piece of bladder to old sores, ulcers or cancers. Renew occasionally. If it proves too painful it may be left off at night. This is also good for old sores on stock.

SKULLCAP.

Mad Weed—Hoodwort—Blue Pimpernal—(*Scutellaria*).

Action.—Diaphoretic, Tonic, Nervine.

Uses.—St. Vitus' Dance, Convulsions, Twitchings, Teething, Tremors, Restless in Young Girls, Delirium Tremens.

This plant is found growing near water in the United States. It has very little smell and a slightly bitter taste. The root is yellow and fibrous. The stem grows from 1 to 3 feet high. The flowers are of a pale blue color and grow in long spikes. A strong tea is made with 1 ounce of the plant to a pint of water and the dose is from $\frac{1}{2}$ ounce to an ounce 3 or 4 times a day. It is good for St. Vitus' dance, convulsions, twitchings, teething, tremors and also for restlessness in young girls. The dose of the fluid extract is from $\frac{1}{2}$ to 1 dram. The infusion drank freely quiets delirium tremens. The warm tea keeps the skin moist and the cold tea has a tonic action.

SKUNK CABBAGE.

Meadow Cabbage—Swamp Cabbage—Fetid Hellebore—(*Dracontium Fœtidum*).

Action.—Emetic, Stimulant, Antispasmodic, Narcotic.

Uses.—Asthma, Chorea, Coughs, Catarrhs, Chronic Bronchitis.

Grows in boggy woods and swamps in the United States. The flowers are among the first that appear in the spring. It is stemless and looks somewhat like a cabbage. Good for asthma, chorea, coughs, catarrhs and chronic bronchitis. The dose of the powdered root is from 3 to 10 grains 4 times a day. Large doses produce nausea, vomiting, dizziness and dimness of sight. The dose of the tincture of the fresh root is from 1 to 2 teaspoonfuls. The tea is made with 1 ounce of the root to a pint of boiling water. The dose is 1 to 2 ounces 3 times a day.

SMARTWEED.

Water Pepper—Knot Grass—Biting Knot Weed—(*Polygonum*).

Uses.—Amenorrhea, Sprains, Bruises, Rheumatism, Stone in Bladder.

This is a small herb with narrow green leaves and spikes of small greenish or whitish flowers. Grows in New York.

For internal uses make a cold tea with 1 ounce of smartweed to a pint of water. Never scald it for internal use. Take freely for several days before the menstrual period in case of amenorrhea or slight menses. For this disease you can use $\frac{1}{2}$ dram of the fluid extract if you wish 3 or 4 times a day. Externally it is splendid for sprains, bruises and rheumatism. Can be combined with wormwood, water and arnica. Saturate cloths and apply hot and continuously. The dose of the cold tea is from 2 to 4 ounces. The ashes of this plant combined with the ashes of thyme have been used as injections for stone in the bladder. However, this is rather dangerous and not to be generally recommended except under the directions of a physician.

SNAKE HEAD.

Balmony—Fish Mouth—Bitter Herb—Turtle Bloom—(*Chelone Glabra*).

Action.—Tonic.

Uses.—Fevers, Jaundice, Liver Troubles, Dyspepsia, Debility.

Grows in wet places in the U. S. and blossoms from July until late autumn. The root is perennial and the stem erect and from 2 to 4 feet high though sometimes decumbent. The flowers are angular, four sided, terminal and generally white though they are of different colors in different varieties. Some of the flowers are white, spotted with red and purple, and they are of a most singular shape, resembling the head of a snake with its mouth open. The leaves are opposite, bear a slight resemblance to mint leaves and are of a dark green color when fresh and almost black when dry and are intensely bitter. Grows in moist lands and by the sides of brooks, both in the open and in the shade.

It is a very powerful bitter tonic. Can be combined with other bitter tonics like gentian and cinchona. The leaves are the best and can be given in powder, tincture, decoction or infusion. The weak tea can be drank freely as a tonic for fevers and jaundice. The weak tea is made with an ounce of the leaves to a pint of water. The dose is from $\frac{1}{2}$ to 1 ounce. The dose of the tincture is from $\frac{1}{2}$ to 1 dram. Good for jaundice and liver diseases. Small doses are good for dyspepsia, debility, etc.

SOLOMON'S SEAL.

(*Convallaria Polygonatum*.)

Action.—Astringent.

Uses.—Female Diseases, Piles.

This plant rises from 6 to 8 inches high. The leaves are lance-like and dark green. The flowers are in clusters and hang on the lower side of the leaning stalks, producing red berries. Grows in meadows, on high banks and mountain sides in every part of the U. S.

The roots are astringent. For female weakness such as whites, weakness of the womb and too much monthly flow, use a handful each of Solomon's seal root and comfrey root, bruised and infused in 2 quarts of wine. This is a valuable remedy. Take a wineglassful 3 times a day. For piles apply the bruised roots to the parts. The decoction is prepared by using an ounce of the root to a pint of boiling water. The dose is from 1 to 3 ounces 3 times a day. Can be used as an injection for whites and piles.

SPEARMINT.
(*Mentha Viridis.*)

Action.—Stimulant, Carminative, Aromatic.

Uses.—Nausea, Vomiting, Gravel, Urinary Troubles, Sprains, Piles.

Excellent for nausea and vomiting. Good for gravel, suppressed urine and painful urination. It is of the same order as peppermint. Bruise the green plant and add enough Holland gin to make a saturated tincture. Take a wineglassful as often as you can possibly bear it for suppressed urine and gravel. Wet cotton with this and apply to piles to relieve the pain. Very excellent for external use for sprains when combined with wormwood and smartweed. Combined with marshmallow root it forms a very good mixture. For high colored urine and painful urination the cold tea is best.

ST. JOHN'S WORT.
(*Hypericum Perforatum.*)

Action.—Astringent.

Uses.—Wounds, Sores, Bruises, Ulcers, Swellings, Caked Breasts.

Grows in the U. S. and flowers in June. Has hard upright stalks with spreading branches and small deep green colored leaves. The flowers are yellow and five leaved with many yellow threads in the middle, which, when bruised, yield a juice like blood. The flowers produce round heads which contain seeds that are small and black like raisin seeds. The root is hard. The tops and blossoms are used for ointments. Very good for wounds and especially perforating wounds. A tea of the leaves, taken internally, is also good for wounds and sores. The best use of the remedy is locally and internally for small perforating wounds. The tea is made by using an ounce of the leaves to a pint of water, for internal use. The dose is from 1 to 2 ounces 3 or 4 times a day. Two ounces of leaves to a pint of water is right for external use. The blossoms infused in sweet oil by exposure to the sun make a fine ointment for perforating wounds, bruises, ulcers, swellings and caked breasts. Fomentations may be used for the same purpose.

STONE ROOT.

Knob Root—Richweed—Horse Balm—(*Collinsonia Canadensis*).

Action.—Diuretic, Antispasmodic.

Uses.—Headaches, Colic, Cramps, Anemia, Chlorosis, Colds, Lumbago, Spasmodic Croup, Whooping Cough, Piles, Whites, Urinary Troubles, Bruises, Ulcers, Wounds, Sprains, Contusions.

Found from Canada to Virginia. Grows from 1 to 3 feet high. Root is hard and stone-like. Has numerous pale yellow flowers with a lemon odor.

Used for headaches, colic and cramps, particularly after childbirth. Good for anemia and chlorosis. The hot infusion at bed time will cure ordinary colds or mild lumbago and is also good for spasmodic croup and whooping cough. Use the tea as an injection for piles or make a suppository of 10 to 60 grains and use every night. The tea is good as an injection for whites. The tea is also good for dribbling of the urine and incontinence of urine in children. The tea is made by using an ounce to a pint of water. Make it stronger if it is to be used as an injection. The dose is from 1 to 4 ounces. The dose of the powdered root is from 10 to 60 grains; of the tincture, from 20 to 60 drops and of the fluid extract from 1 to 60 drops. Applied externally

as a poultice the leaves are good for bruises, blows, wounds, sprains and contusions.

STRAWBERRY.

(*Fragaria Vesca.*)

Action.—Diuretic, Aperient.

Uses.—Kidney and Bladder Troubles, Sore Mouth.

Persons who suffer from kidney or bladder troubles should frequently eat strawberries when they are in season and at other seasons they should use a syrup made from the berries. Strawberries are a very valuable remedy for either kidney or bladder troubles. Strawberry leaf tea with alum is good for sore mouth.

SUMACH.

(*Rhus Glabra.*)

Action.—Astringent, Refrigerant.

Uses.—Venereal and Scrofulous Diseases, Falling of Bowels and Womb, Gleet, Skin Eruptions, Sore Throat, Diarrhea, Dysentery, Ulcers, Old Sores, Kidney Troubles.

This shrub grows from 6 to 14 feet high. The stem is knotty, usually bent and is divided into several branches. Has a smooth, light gray bark. The blossoms are reddish and grow in spikes. Leaves turn red in autumn. The berries are crimson and grow in thick clusters.

An excellent injection or wash is made of the decoction of the bark of the root for scrofulous and venereal diseases and for falling of the womb and bowels. At the same time a decoction of the bark of the root with white pine, slippery elm and blood root should be taken freely. This is also good for eruptions of the skin, gleet, etc. A tea made from the berries and sweetened with honey is good for sore throat when used as a gargle. If sweetened with loaf sugar it is good for dysentery, diarrhea and other bowel complaints. For old sores and ulcers a splendid poultice may be made from either the berries or the bark. Either the fluid extract or the decoction is good for kidney troubles and especially where there is suppression or incontinence of urine. From 10 to 30 drops of the fluid extract may be taken during each day.

SUNFLOWER.

(*Helianthus Annuus.*)

Action.—Diuretic, Expectorant.

Uses.—Kidney Troubles, Throat Troubles, Lung Troubles, Bronchitis, Laryngitis.

Has an erect rough stem usually about 7 feet high. The leaves are large and three nerved. The flowers are large and nodding with yellow rays. The seeds are numerous and dark purple when ripe. Native of South America but cultivated here on account of its beautiful yellow flowers which appear in July and August. The ripe seeds are the part used.

The seeds and leaves are diuretic and expectorant and have been much used in kidney, throat and lung affections. Put 2 pounds of the bruised seeds into 5 gallons of water and boil down to 3 gallons, strain, add 12 pounds of sugar and 1½ gallons of good Holland gin. The dose of this is from 2 drams to 2 ounces 3 or 4 times a day or whenever there is a tickling or irritation of the throat or the cough is excessive or when expectoration is diffi-

cult in bronchitis, laryngitis or lung consumption. Other medicines may be added to the above. An infusion of the pith of sunflower stem is good as a diuretic. The pith contains nitre. For the tea use 10 ounces of the pith to a pint of water. The dose is from 1 to 2 ounces 3 or 4 times a day.

SWAMP SNAKE ROOT.

Uses.—Female Troubles, Coughs.

Grows by the sides of streams on lands so low that they are flooded at some season of the year. It rises 6 to 8 inches high. The leaf is round with notches on the edge. The color of the root is purple. The smell is fragrant and agreeable.

Good for coughs and consumptive habit. Good also for female debility due to irregular monthlies and has been called "the female regulator." The tea is made by using one ounce of the plant to a pint of boiling water. The dose is from $\frac{1}{2}$ to 1 ounce 3 times a day.

SWEET CLOVER.

King's Clover—Melilot—(Melilotus Alba).

Uses.—Leucorrhea, Coughs, Swellings, Inflammations.

One kind of sweet clover has white blossoms and the other has yellow blossoms. It very often grows from 4 to 6 feet high. The odor is somewhat like that of the tonqua bean.

A tea made of the leaves and flowers is good for coughs and leucorrhea. However, it is most frequently used as a poultice or an ointment for swellings and inflammations.

SWEET FLAG.

Flag Root—Sweet Rush—Calamus—(Acorus Calamus).

Uses.—Cholera Morbus, Colic, Stomach Troubles.

Sweet flag is large, fleshy and horizontal. It should be gathered late in the autumn. It is pinkish inside and has an agreeable odor and pleasant taste. In making the tea use an ounce of the root to a pint of boiling water. The hot decoction is also good. The dose is a wineglassful. It is very good for cholera morbus and colic. The dose of the powdered or grated dry root is 1 teaspoonful every 15 minutes; or, of the infusion of the green root the dose is from 4 to 6 ounces. It is very good for colic and especially wind colic. It is also good for flatulent stomach disorders. In flatulent colic of children it is best combined with magnesia. The dose for adults is from $\frac{1}{2}$ to 1 teaspoonful of magnesia and the dose for children from 5 to 10 grains.

TANSY.

(Tanacetum Vulgare.)

Action.—Tonic, Anthelmintic.

Uses.—Menstrual Troubles, Hysteria, Urinary Troubles, Stomach Troubles, Flatulence, Jaundice, Worms.

This is excellent for its tonic action on the stomach. Good for menstrual troubles and hysteria. Aids in bringing on the menses. A tea made of the leaves and seeds is good for worms in children. The juice or infusion is good for painful urination and for urinary weakness. For the tea use 1 ounce of the leaves or tops to a pint of hot water and give from 1 to 2 ounces for

menstrual troubles. The cold tea is good for dyspepsia, flatulence, hysteria, jaundice and worms. As a fomentation it is good for swellings, local inflammations and also as an application to the bowels in monthly troubles. The dose of the powder is from 30 to 60 grains 2 or 3 times a day; of the tea from 2 to 4 ounces; of the tincture from 1 to 2 teaspoonfuls.

TETTERWORT.

Celandine—(*Chelidonium*).

Action.—Purgative, Diuretic.

Uses.—Dropsy, Green Sickness, Skin Eruptions, Jaundice, Liver Troubles.

Is found by the side of running brooks. Grows to the height of 2 feet. The stalks have larger joints than is common with other plants and are very easily broken.

From 20 to 30 drops of the juice or $\frac{1}{2}$ teaspoonful of the powdered root in new milk is said to cure dropsy, green sickness and skin eruptions. It is very good for the liver when the pain is felt under the right shoulder blade. To make the tincture use 1 ounce of the plant to a pint of spirits. This is good for catarrh of the liver and jaundice. The dose of this is from 10 to 20 drops. Should be taken 4 times a day. The dose of the powder is from 10 to 40 grains and of the fresh juice from 30 to 40 drops in liquid.

THORN APPLE.

Stramonium—*Stink Weed*—*Jamestown Weed*—*Jimson Weed*—(*Datura Stramonium*)—(*Poison*).

Action.—Narcotic, Anti-spasmodic, Sedative.

Uses.—Epilepsy, Insanity, Asthma, Chorea, Sciatica, Ulcers, Tumors, Cancers, Scalds, Burns, Piles, Painful Monthlies.

Grows plentifully in Europe and the U. S. by the roadsides. Is from 4 to 6 feet high. The stalks are long and where the branches join them there arises a white flower which is succeeded by a prickly pod about the size of a hen's egg and containing seeds.

Its action is narcotic, anti-spasmodic and sedative. Good for epilepsy, insanity, asthma, chorea or St. Vitus' dance and sciatica. For an ointment simmer 1 pound of fresh leaves with 3 pounds of lard. This is good for ulcers, tumors, cancers, scalds, burns and piles. The internal dose of the powdered leaves is 1 grain; of the fluid extract, $\frac{1}{4}$ to $\frac{1}{2}$ grain; of the tincture (10 per cent. strength), 5 to 20 drops. The leaves when dried may be mixed with tobacco and smoked for asthma. The following is good as a suppository for dysmenorrhea. Take 4 grains of extract of stramonium, 4 grains of belladonna, 4 grains of extract of opium, 40 grains of camphor and a sufficient quantity of oil of cacao. This will make 12 suppositories. Insert one in the bowel every hour or two for relief from pain in dysmenorrhea or painful monthlies.

THYME.

Mother of Thyme—*Garden Thyme*—(*Thymus Vulgaris*).

Action.—Antiseptic, Diaphoretic, Resolvent, Tonic, Stomachic.

Uses.—Leucorrhea, Tooth Paste, Dyspepsia, Hysteria, Painful Menstruation, Flatulence, Colic.

The herb is cut while in bloom and dried for use. Oil of thyme consists of two ingredients, one of which is called thymol on account of which this plant is a valuable antiseptic. A tea can be made of the plant and is good as an injection for leucorrhea. It is good in small doses of from 1 to 2 drams as an intestinal antiseptic, but it does good through the action of the thymol. Thymol is much used as a medicine, for instance, in thymol tooth paste. Ointment of thymol, 10 grains and lanolin 1 ounce, is good for acne. Cold thymol tea, 1 ounce to a pint of boiling water, is good for dyspepsia with weak and irritable stomach. The warm tea is good for hysteria, painful menstruation, flatulence, colic and to produce sweating. In making the tea use an ounce of the plant to a pint of cold or hot water. The dose is from 1 to 3 ounces.

TOBACCO.

(*Nicotiana Tabacum*.)

Action.—Emetic, Relaxing, Narcotic, Diuretic.

Uses.—Asthma, Coughs, Earache, Piles.

Tobacco is very relaxing but the nicotine in it is very poisonous and makes it an unsafe remedy in many cases. Tobacco smoke is good as a palliative of asthma and of nervous coughing caused by tickling of the larynx. It is also much used for earache. It was formerly used a great deal externally as an application to broken surfaces but symptoms of poisoning sometimes result when it is thus used and hence it is not used so much now as formerly. It is one of the ingredients of the pile remedy known as Trask's Ointment.

TRAILING ARBUTUS.

Gravel Weed—Winter Pink—Mountain Pink—Ground Laurel—Mayflower.
(*Epigea Repens*.)

Action.—Astringent, Diuretic.

Uses.—Kidney Troubles, Gravel, Urinary Troubles.

Trailing plant, indigenous, with woody stems 6 to 20 inches long, covered with hairy pubescence in all its parts. The leaves are evergreen, 2 to 2½ inches long, 1½ inches wide, roundish at the ends and abruptly tipped with a sharp point. The flowers are very fragrant and white or striped with various shades of red. Appears in April and May. The capsule or pod is depressed, globular, five-lobed, five-celled and many seeded. Grows in sandy woods and is found from Newfoundland to Pennsylvania and Kentucky. Prefers sides of hills and a northern exposure. The leaves are the parts used.

It is astringent and diuretic (acts on kidneys). Good for gravel and all diseases of the urinary organs. The tea made by using 2 ounces of the leaves to a pint of boiling water should be drunk freely every few hours. To make a diuretic compound, take of this plant, also queen of the meadow, dwarf elder bark, marshmallow root, ½ ounce of each coarsely bruised; boiling water and good Holland gin, of each 1 pint and enough honey to sweeten. Pour the boiling water on the plants and boil them with gentle heat in a close-covered vessel for 6 hours. Remove from the fire, strain and add sufficient honey to render it pleasant. Very useful for gravel and suppressed, high colored, and scalding urine. The dose is 2 ounces 3 or 4 times a day. For gravel ½ ounce of wild carrot may be added.

TURKEY CORN.

(Corydalis.)

Action.—Tonic, Diuretic, Alterative.**Uses.**—Syphilis, Blood Diseases, Scrofula.

This is an early spring plant sometimes making its appearance in March. The root is tuberous; the stem is 8 to 10 inches high; and the flower stem bears nodding, many flowered clusters.

It is a tonic, diuretic and alterative. Is good for syphilis and blood affections such as scrofula. Wash syphilitic ulcers with the tea. It is frequently used with other blood remedies, such as poke root, stillingia, prickly ash and iodide of potash. The tea is made by using $\frac{1}{2}$ ounce of the powdered bulb to a pint of boiling water. The dose is from 1 to 2 ounces 3 or 4 times a day. The dose of the tincture is from $\frac{1}{2}$ to 2 teaspoonfuls and of the fluid extract from 15 to 60 drops. This remedy is especially good for syphilis and scrofula when combined with the alterative action of mandrake, prickly ash, blue flag, poke root and Aven's root. Use equal parts of all except the prickly ash and of it use $\frac{1}{4}$ as much as of each of the others.

UNICORN ROOT.**Blazing Star—Devil's Bit—(Helonias Dioica).****Action.**—Tonic, Diuretic.**Uses.**—Painful Urination, Suppressed Menses, Miscarriage, Whites, Amenorrhea.

Grows in the U. S. east of the Mississippi. The root is perennial, rather smaller than the little finger, irregular in form, 1 to 2 inches long, of dry dark color, very hard, full of little pits, rough and wrinkled. It has numerous small, dark colored, fibrous roots which, when deprived of their outside bark somewhat resemble hog bristles. The leaves are pale, smooth, evergreen and in the winter lay flat on the ground in the shape of a star. The stem is from 8 to 18 inches high, upright, naked and terminating in a spike or tassel of white flowers. Found growing in thin soils. The roots are the part generally used.

It is a tonic and diuretic. Relieves colic and painful urination. Prevents miscarriage. Good for suppressed menses and other female troubles and is the basis of many of the recent compounds for female diseases. It is much used for whites, amenorrhea or want of menses, and for painful menses. The dose of the powder is from 20 to 30 grains; of the fluid extract, from 10 to 30 drops, 3 or 4 times a day. The decoction is made by using an ounce of the plant to a pint of water and the dose is 1 or 2 ounces 3 times a day.

WHITE OAK.

(Quercus Alba.)

Action.—Astringent, Antiseptic, Tonic.**Uses.**—Uterine Bleeding, Whites, Bleeding Piles, Sore Throat, Sore Eyes, Tonsilitis, Ulcers, Poisons, Scrofula, Gangrene, Antidote.

This bark is astringent, tonic and antiseptic. It is good as an injection for uterine bleeding and for whites. It is good to check gangrene; wet the parts with the decoction. For whites use the decoction diluted one-half with water. Good as a gargle for sore throat and tonsilitis and when weakened is good for sore eyes. Good for old indolent sores and ulcers. Mixed with salt

and water it is fine for raw surfaces on horses' shoulders. It is a good injection for bleeding piles, either full strength or diluted. It contains tannic acid which is an antidote for poisons. The decoction may be taken for this purpose and the dose is from 1 to 2 ounces. The longer you boil the decoction, the stronger it becomes. Usually an ounce of the bark should be used to a pint of water. Green bark of elder and white oak, bruised together, or in strong decoction, forms a very good application for abrasions and for sores on horses' shoulders. A coffee made of roasted acorns is said to be good in the treatment of scrofula. The dose of the decoction is from 1 to 2 ounces.

WHITE POND LILY.

Sweet Scented Water Lily—Toad Lily—Water Cabbage—(Nymphaea Odorata).

Action.—Astringent.

Uses.—Leucorrhea, Gonorrhea, Scrofulous Sores, Boils, White Swellings, Lockjaw, Diarrhea, Dysentery, Pimples, Freckles, Inflamed Eyes, Sore Throat, Asthma.

Found in all parts of the country in rivers, ditches and ponds. The seeds ripen in water. The flowers close at night and the perfume is similar to magnolia. The roots are the part mostly used as medicine. They are of a blackish color, thick and notched.

Good for gonorrhea, leucorrhea and scrofula and also for bowel complaints, including diarrhea and dysentery. The dose of the powdered root is from $\frac{1}{4}$ to $\frac{1}{2}$ teaspoonful in warm water. One-half pint of port wine and $\frac{1}{4}$ pound of sugar added to a pint of the expressed juice make a fine preparation and the dose is from 2 to 4 tablespoonfuls 4 times a day. Poultices made of the roots and leaves are good for lockjaw, scrofulous sores, boils and inflamed skin. In combination with cohosh root and slippery elm bark it makes a good poultice for white swellings. The poultice should be changed 3 or 4 times a day and the patient should also take some good blood remedy. If the fresh juice of the roots is mixed with lemon juice a good cosmetic will be the result. This is good for removing freckles and pimples. A decoction made of the leaves is good when used as a wash for old sores, fresh wounds and ulcers. Also good for putrid sore throat and asthma when used as a gargle and is a good wash for inflamed eyes.

WILD CARROT.

Bee's Nest—Bird's Nest—(Daucus Carota).

Action.—Diuretic.

Uses.—Kidney and Bladder Diseases, Obstructed Menses, Stomach Troubles, Dysentery, Chronic Coughs, Fissures and Ulcers, Hiccough.

The root of the cultivated carrot when scraped makes a fine poultice for ulcers.

The wild carrot is common in the U. S. and grows in old fields and by the roadside. The stalks are rougher and whiter than the stalks of the cultivated carrot. When used in the form of a strong decoction the wild carrot is excellent for gravel and passage of stone from the bladder and kidneys. It is also good for fissured nipples and ulcers which are of a cancerous nature. The seeds are good for dysentery, flatulent disorders, obstructed menses, hiccough and chronic coughs. From $\frac{1}{4}$ to $\frac{1}{3}$ of a teaspoonful is the dose of

the bruised seeds. A strong decoction made of the seeds may be drank freely while warm.

WILD CHERRY.

Black Cherry—Rum Cherry—Cabinet Cherry—(*Prunus Virginiana*).

Action.—Tonic, Astringent.

Uses.—Coughs, Whooping Cough, Diarrhea.

The bark of the root is the part used. Add cold water to the bark and let it stand from 36 to 48 hours. The dose is from 2 to 4 ounces 3 or 4 times a day. It is very good as a tonic. Good for coughs and especially when it is combined with other remedies. For the cough of consumption the following is good. Take 2 grains of codeine, 12 drops of tincture of belladonna and enough syrup of wild cherry to make 3 ounces. Give 1 or 2 teaspoonfuls when the cough is troublesome at night. The mild tea made of the bark of the root allays nervous coughs and is good for whooping cough. For this purpose the tea should be made with from $\frac{1}{2}$ to 1 ounce of the bark to a quart of water. Good for the stomach and bowels as a tonic in case of diarrhea. For the regular tea use 1 ounce of the bark to a pint of water. The dose is from 1 to 2 ounces. The dose of the syrup is 1 dram and of the fluid extract from 10 to 60 drops.

WILD GINGER.

Colt's Foot—Canada Snake Root—(*Asarum Americanum*)—(*Asarum Canadense*).

Uses.—Debility, Melancholia, Palpitation, Low Fever, Whooping Cough.

An humble, stemless plant. The leaves rise immediately from the root, usually 2 in number and resemble a colt's foot. The flowers proceed from between these leaves and are large, purple and bell shaped. The root is of a grayish brown color without but is white within. Grows in shady woods and rich soils. Flowers from April to July. Useful in debility, melancholia, palpitation, low fever, convalescence and whooping cough. For these troubles it should be used in small doses. Large doses cause sickness at the stomach. The root is the part used in making the powder and the dose is $\frac{1}{2}$ dram. In making the tea use an ounce of wild ginger to a pint of water and give from 1 to 2 teaspoonfuls every 2 or 3 hours.

WILD YAM.

Colic Root—(*Dioscorea Villosa*).

Action.—Diaphoretic, Emetic.

Uses.—Liver Troubles, Gall Stones, Jaundice, Colic, Cramp in Bowels, Chronic Malaria.

Grows in the southern states; less plentiful in the northern states. It is a climbing plant and forms a thicket in moist localities. The leaves are smooth above and downy beneath. The fruit is a triangular, wing-shaped capsule that grows in pendant bunches. The root forks repeatedly and breaks with difficulty. It is of a yellow broom color. It is sometimes known as rheumatism root.

It acts especially on the liver. It is good for gall stones and especially when the stones are small. It aids in the expulsion of the stones and reduces the inflammation afterwards. Good for jaundice and especially when

there is colicky pain. Also good for cramp in the bowels and for liver troubles. For the decoction use 2 ounces of the root to a pint of boiling water and let it boil slowly for half an hour. The dose is from $\frac{1}{4}$ to $\frac{1}{2}$ teacupful every half hour for bilious colic. The usual dose is from 1 to 4 ounces taken 4 times a day. The following is good for chronic malaria. Take 1 teaspoonful of Fowler's solution, $\frac{1}{2}$ ounce of tincture of wild yam and $2\frac{1}{2}$ ounces of compound tincture of cardamon. Take a teaspoonful in water after meals. The dose of the tincture of wild yam is from 10 to 40 drops and of the fluid extract, from 10 to 20 drops.

WINTERGREEN.

Tea Berry—Mountain Tea—(*Gaultheria Procumbens*).

Action.—Stimulant, Restorative, Cordial, Antiseptic, Aromatic, Astringent.

Uses.—Rheumatism, Menstrual Troubles, Asthma, Neuralgia, Chronic Diarrhea.

Essence or oil of wintergreen may be used or a tea may be made of the green plant. The tea is good to restore strength, promote menstruation and relieve asthma. The oil is used for neuralgia and rheumatism as it contains salicylic acid. The plant is a cordial, stimulant, restorative and partial antiseptic. It is excellent for some forms of chronic diarrhea. The dose of the oil of wintergreen is from 5 to 10 drops every 3 to 6 hours and this dose should be gradually increased until it causes ringing in the ears.

WITCH HAZEL.

(*Hamamelis Virginica*.)

Action.—Astringent.

Uses.—Ulcers, Piles, Painful Swellings, Sprains, Bruises, Sore Eyes, Falling of Womb, Enlarged Veins, Sore Gums, Bleeding, Throat and Nasal Catarrh, Sunburn, Eczema, Burns, Frostbites.

This is a shrub rising from 6 to 10 feet high and blossoming in winter. It blossoms after the leaves are destroyed by frost and the fruit is not injured by the winter. Does not open until the next autumn when it flowers again and then fruit and blossoms will be found on the same tree.

The twigs and flowers are good in decoction. Can use the bark as a poultice for ulcers, piles, painful swellings, sprains and bruises. The tea of the leaves, one ounce to a pint of water, is good for sore eyes. A strong decoction of the leaves is good as an injection for falling womb and for piles and is also an excellent application for enlarged veins. You can buy any form of witch hazel in any drug store and at but little cost. There is the distilled extract, the fluid extract and the tincture. The distilled extract, diluted 2 or 3 times, is good for sore gums, sore throat and nasal catarrh. Good for bleeding after the pulling of teeth. The following is a good ointment. Take from 1 to $1\frac{1}{2}$ fluid drams of the fluid extract of witch hazel, 1 dram of zinc oxide, 40 grains of starch, 30 drops of glycerine, and 1 ounce of ointment of rose water. This is to be used as an ointment for sunburn, eczema, etc. The following is good for frostbites and burns. Use 1 ounce of solution of lead, 1 ounce of laudanum, 2 ounces of distilled witch hazel and 1 pint of water. The following is good for piles. Mix with lard equal parts of the decoctions of witch hazel, white oak bark and apple tree bark.

WOOD CHARCOAL. (Carbo Ligni.)

Action.—Disinfectant, Absorbent.

Uses.—Mortification, Old and Offensive Ulcers, Indigestion, Gas Dyspepsia, Acid Stomach, Foul Breath.

Take the white or soft maple; cut and split fine as oven wood; set in a small coal pit and when well burned take it out and put a small quantity at a time into an iron kettle and pound fine and then sift through a common sieve. Then put the whole into an iron kettle over the fire and heat until red hot and the coal ceases to send out a smoke. Then, when cool enough, put into bottles and cork tightly.

For mortification and old, offensive, eating ulcers, prepare as directed above; mix well with yeast and use as a poultice. For gas dyspepsia, indigestion, acid stomach and foul breath, give from a teaspoonful to a tablespoonful either before or after meals as may feel best.

WORMWOOD. (*Artemisia Absinthium*.)

Action.—Bitter Tonic, Anthelmintic.

Uses.—Sprains, Etc.

The stem is covered with a whitish down, the leaves are whitish on both sides and the flowers are small and yellowish and form a long cluster. It has a strong smell and a bitter spicy taste. Its main use is external. It is splendid for sprains, either alone or with salt water and smartweed or arnica.

YARROW. Thousand Leaf—Milfoil—(*Achillea Millefolium*.)

Action.—Tonic, Astringent, Alterative.

Uses.—Hemorrhage of Lungs and Kidneys, Incontinence of Urine, Diabetes, Piles, Dysentery, Leucorrhea, Amenorrhea, Flatulent Colic.

Grows from 12 to 18 feet high with simple stems branching at the tops. Has double winged leaves and leaflets which are minutely divided and subdivided. The flowers form a thick flat bunch and are white or rose colored. Common in Europe and North America. Grows in fields, woods and pastures and flowers nearly all summer. Should be gathered when in bloom.

It is tonic, astringent, alterative. Is good for hemorrhage of the lungs and kidneys, incontinence of urine, diabetes, piles, dysentery, leucorrhea, amenorrhea, and flatulent colic. For the tea use 1 ounce of the herb to a pint of water. The dose is from 4 to 6 ounces 3 or 4 times a day. The dose of the oil is from 10 to 20 drops.

YELLOW DOCK. Narrow Leaf Dock—Sour Dock—Curled Dock—Garden Patience—(*Rumex Crispus*.)

Action.—Alterative, Tonic, Astringent.

Uses.—Dyspepsia, Liver Complaint, Erysipelas, Scrofula, Skin Diseases, Blood Diseases, Ulcers, Itch, Glandular Swellings.

The leaves are long and curl in waves at the edges and are light green in color. Grows from 2 to 5 feet high. The flowers are small and greenish

and grow thickly in long stems. The root is brownish yellow on the outside and yellow within. This is an excellent remedy.

The decoction is made by using 2 ounces of the fresh root to a pint of water and the dose is from 1 to 4 ounces 3 or 4 times a day. It is a good alterative tonic. Good for dyspepsia, liver complaint, erysipelas, scrofula, skin diseases and blood diseases generally. The following combination is very good. Take 1 ounce each of the fluid extracts of dandelion, yellow dock, burdock and wild cherry. Take from 1 to 4 teaspoonfuls 4 times a day. The fresh root, bruised in cream, lard or fresh butter, forms an excellent ointment for scrofulous ulcers, itch and indolent glandular swellings.

A CHAPTER FOR MEN.

It does not pay for a young man to "sow his wild oats." The transient pleasure of a moment may mean the suffering of a lifetime. Though a young man may sow his wild oats for some time and apparently escape retribution, or he may contract a disease and be apparently cured, yet, on the other hand, one indiscretion may mean the ruining of his health and perhaps later the health of his wife also.

Preventive treatment is the best kind of treatment for the diseases of men. Gonorrhea and syphilis are the results of immorality and uncleanness. Do not expose yourself to these loathsome diseases. However, if you have been exposed, at least observe the laws of cleanliness and immediately wash the exposed parts thoroughly with some good antiseptic solution like carbolic acid, corrosive sublimate or permanganate of potash. Do not wait an hour, or even ten minutes, but use one of these solutions at once and even then you are taking great chances of disease. Abstinence and cleanliness are the preventives of these diseases.

GONORRHEA.

(Including Chordee, Bubo, Clap, Gleet and Stricture.)

This disease is commonly known as the "clap."

CAUSES.—The cause is generally intercourse with one afflicted with this disease. It may sometimes be caught from towels, etc., used by one having the disease. It is then likely to make itself manifest in the eyes, etc. Though many cases of gonorrhea are apparently recovered from yet the disease is often improperly treated and, though apparently cured, it still exists and a man who has once had the disease may, a long time afterward, infect his wife and this is a much more serious disease in women than in men. In women, this disease is often the cause of diseases of the ovaries, tubes and womb.

SYMPTOMS.—The first symptoms of this disease are usually noticed between the second and seventh day after exposure. At first there is noticed a tickling or uneasiness at the opening of the urethra or at the end of the penis. The organ is found to be somewhat reddened and the mucous discharge is more viscid than usual and increased in quantity. This discharge becomes yellowish or greenish in color and is thick. The heat, redness, swelling and pain increase. The passing of water becomes frequent and is attended with a great deal of pain.

Chordee is often a marked characteristic of this disease. The erections become frequent and are very painful and the organ is bent downward.

Bubo, or swelling of the glands in the groin, is sometimes a feature but these glands seldom suppurate, or result in abscess.

Orchitis, or inflammation of the testicles, is frequently observed as a feature of this disease.

Gleet is the chronic form of Gonorrhea and is obstinate to treat.

Stricture, or closing of the passage, is often caused by inflammation or the use of medicines. It is attended with painful urination.

Under good treatment the disease is likely to last from a month to six weeks and if improperly treated it often lasts for months.

TREATMENT.—

Preventive treatment is the best and consists in observing cleanliness and not exposing yourself. However, in case you have contracted the disease it is extremely necessary that you begin treatment at once and without delay. Do not get a quack to treat you but get a good physician. Stay in bed for a week and take mild drinks in large quantities. Teas made from slippery elm, pumpkin seed, flaxseed or buchu leaves are excellent. Drink plenty of water. Eat no meats or rich and highly seasoned foods and drink no alcohol in any form but live on milk alone. Keep the bowels open freely. Follow this treatment and you will soon be well.

Wash the organ frequently with warm water. If you have much pain or chordee use suppositories in the rectum. The following is good for this purpose. Take 6 grains of pulverized opium, 18 grains of pulverized camphor and enough oil of cacao to mix well. Mix these ingredients and make into 6 suppositories and use one at bed time. Remember that this constipates so move the bowels with an injection before going to bed.

For the pain while passing urine put the penis into hot water. Keep the glans penis wrapped in absorbent cotton and be sure to burn this cotton and use every care not to get the discharges into the eyes or upon other mucous surfaces.

If you wish to use an injection get a blunt pointed, hard rubber, urethral syringe holding 3 fluid drams. Nitrate of silver, zinc chloride, permanganate of potash, salicylic acid and creosote are very irritating and may do harm. The following is a good injection. Take 1/10 grain of hydrargyri chloridi corrosivi, 18 grains of zinc sulpho-carbolat., 2 ounces of glyceriti boroglycerinii (31 per cent. boric acid) and 4 ounces of aquæ rosæ. Mix, shake thoroughly and use from 1 to 2 drams as an injection once a day. If the urethra is very irritable you can use from 18 to 24 grains of the watery extract of opium added to the above prescription.

Later the following injection may be used in place of the one above. Use an ounce or two a day. Take 1 dram of zinc acetate, 1 dram of tannic acid, 3 drams of boric acid and 6 ounces of aqua hydrogen dioxid.

For early use when the penis is too sensitive to stand a stronger injection the following will be found good. Take 2 drams of boric acid, 18 grains of aqueous extract of opium, and 6 ounces of the dilute solution of subacetate of lead. Mix and use 1 dram once or twice a day. If there is any sensitiveness left the following may be used. Take 1 grain of morph. sulph., 20 grains of zinc sulpho carbolat and 4 ounces of rose water. Use a syringeful at a time as an injection twice a day. Or, the following may be used as an injection in the same way. Take 20 grains of zinc sulph. carbolat, 12 drops of acid hydrocyanic dil. and 4 ounces of aquæ rosæ. Or, this is a good one. Mix 1 dram of fl. ext. hydrastis with 1 ounce of aquæ rosæ. Use a teaspoonful of this solution at each injection. It will stain the clothing if it comes in contact with it. It may be used twice a day and is also good for gleet. If injections do not help gleet the best treatment is the regular passing of sounds by a competent physician.

During the first 10 days the following is a good injection for gonorrhea. Take 5 grains of hydrastinæ hydrochloride, 5 grains of protargol, 1½ drams of glycerine and 1 ounce of aquae distillat qs. ad. f. Precede with a hot water

injection and use from 4 to 6 times a day. Retain the injection from 5 to 10 minutes each time.

After the first 10 days or after the first stage has passed use 5 grains of the commercial hydrastine to an ounce of water. Use from 1 to 2 drams of this as an injection once or twice a day.

PEOPLE'S HOME REMEDIES.—

1. **Parsley.**—For painful urination and gonorrhea. Dose of infusion—from 2 to 4 ounces 3 or 4 times a day.

2. **Quince Seeds.**—Drink freely of a decoction of quince seeds.

3. **Cranesbill and Blood Root.**—Make a decoction by using 2 parts of cranesbill to 1 part of blood root and use as an injection for gonorrhea. A good remedy.

SYPHILIS.

Pox—Lues—(Including Chancre and Chancroid).

Syphilis is a contagious disease and is either acquired or hereditary. The acquired form is divided into 3 stages—primary, secondary and tertiary. The virus of the disease is active in the transmission of the malady throughout the primary and secondary stages, and during all this time all secretions from the sores are capable of producing the disease in another person provided they be brought in contact with a tear or sore in the skin or mucous membrane. Infection does not take place through healthy skin or mucous membrane but the break may be so slight as to escape notice. The acquired form is not conveyed by the discharges from syphilitic sores or by the blood of a syphilitic if five years have elapsed since the date of the first infection. In other words, the disease is contagious during the first two stages but not during the tertiary stage.

Hereditary syphilis may come to a child from one or both parents. A syphilitic father or mother may be the parent of a syphilitic or a non-syphilitic child. If both parents are syphilitic the probability of the child's being affected is twice as great as if one parent alone is affected.

The primary sore or lesion of syphilis is called the chancre and develops at the point of infection and an ulcer is the result. The secondary stage soon develops. The lymph nodes or glands all over the body, notably those nearest the chancre, become enlarged and inflamed. Following this is the tertiary stage in which the bone covering and internal organs suffer from peculiar growths. These growths are usually in circumscribed nodes. They (the gummata) may grow to a considerable size. Syphilis causes grave changes in the blood vessels, liver, lungs and brain and, in fact, in about all the organs of the body.

SYMPTOMS.—

First Stage.—The patient develops, at the site of the original contact with the virus, a small pimple which has an area of hard tissue about its base. This is the hard chancre and usually makes its appearance in from 12 to 21 days after exposure. The inguinal glands are slightly enlarged. This period lasts from 3 days to two weeks and is followed by the secondary stage. The chancre is but a local manifestation of the disease. The disease is constitutional at the very beginning and is not confined to the chancre. The chancre is a small hard swelling and disappears with the secondary symptoms whether it is treated or not. No pus comes from the chancre but if there are false chancres, or chancroids, pus may form. Chancroid is a local disease and

these false chancres are soft. Chancroids appear in from 3 to 9 days after exposure and there are usually more than one. If more than one true chancres appear they all appear at once.

Secondary Stage.—Fever is an early symptom and sometimes goes to 104 or 105 degrees but is usually at about 101 degrees. The skin eruptions may occur in limited areas or they may be widely distributed over the whole body and even involve the face. As this stage advances the eruption may be papular and finally pustular. At the angles of the mouth or at the anus there come the mucous patches or ulcers. Also warty growths called syphilitic condylomata. Falling of the hair sometimes occurs and the finger nails may become loosened and drop off.

Tertiary Stage.—The skin lesions are more severe than in the secondary stage. Gummata come in different parts of the body, developing in the skin and internal organs. Lesions of the nervous system usually occur late but may appear in 6 months. They usually come within the first 10 years and seldom as late as 20 years. The cases may be mild or very severe. The nerve lesions assume many forms of disease.

TREATMENT.—During the primary and secondary stages, Hare recommends full doses of protoiodide of mercury in compressed tablet form. The dose is $\frac{1}{4}$ grain 3 times a day, increased by 1 or 2 quarters each day until the patient shows distinct evidence of the full systemic effect of the drug, as shown by loose bowels or tender teeth and slight salivation. (Use tablet triturate.) After the effects of the drug are manifest the dose should be diminished one-half and kept at this point. If necessary, increase the dose the second time if the symptoms of syphilis increase. If necessary, use blue ointment rubbed into the skin once a day, using 1 dram. Choose a different spot each time and rub for a long time. Continue the treatment in other ways if necessary.

For the tertiary stage administer iodide of potash, sodium or strontium. It usually requires 100 grains a day. Use a saturated solution (1 grain to 1 minim of water, dissolved) and give 10 minims in a dessert spoonful of the compound syrup of sarsaparilla 3 times a day. Give this dose an hour after meals and increase each day from 1 to 5 drops at a dose.

A good remedy is to put from $\frac{1}{2}$ to 1 ounce of iodide of potash into a pint of simple syrup and add 2 ounces of each of the following herbs in fluid extract form—stillingia, corydalis, yellow dock, burdock, poke root and sarsaparilla. Take a teaspoonful 3 times a day.

GONORRHEAL RHEUMATISM. (Arthritis.)

Put a splint on the joint to keep it at rest and apply a 50% ichthyol ointment on the joint. Give iodide of potash internally.

NOCTURNAL EMISSIONS.

After a certain age these emissions are very likely to occur with any man. There is no need to be alarmed when they are not too frequent. Quacks make money from poor scared creatures who are fearful of terrible consequences. Once or twice a week will not injure.

TREATMENT.—Don't worry about them. Don't sleep with too much covering. Keep your thoughts from such matters. Sleep on a hard mattress

At bed time, if you do not sleep well and are nervous and restless, take 20 grains of bromide of sodium or potassium. Sometimes 1/100 of a grain of hyoscine at bed time is good. Avoid stimulating foods and drinks. Bathe the scrotum with cold water before retiring. Hop tea is very good when taken regularly.

The homeopathic treatment is to take the second dilution of China and the third dilution of phosphoric acid 3 times a day.

Doctor the mind by not worrying.

ENLARGED OR INFLAMED PROSTATE GLAND.

This is a gland in the urethra near the bladder. The gland enlarges some in later life and in some cases it enlarges a great deal. In such cases it is difficult and sometimes impossible to pass water and a catheter must then be used. Gonorrhea sometimes causes prostatitis or inflammation of this gland.

TREATMENT.—Rest in bed and regulate the bowels. Apply leeches to the perineum or apply fomentations of hops. Give mild drinks to render the urine mild. An operation may be necessary.

Homeopathic Treatment.—Give the third trituration of Conium 4 times a day.

WOMAN'S DEPARTMENT.

DISEASES OF WOMEN.

DISORDERS OF MENSTRUATION.

ABSENCE OF MENSES—(AMENORRHEA).

DESCRIPTION.—This term is applied to those cases in which menstruation has never appeared. Secondary amenorrhea or suppressed menses is applied to those cases in which menstruation has ceased after once having been established.

CAUSES.—

1. Defective development of the organs of generation.
2. Premature atrophy or dwindling of those organs.
3. Injury and local disease.
4. Acute and chronic general diseases.
5. Mental disturbances.

Menstruation is often absent in typhoid fever. It is commonly absent in anemia, chlorosis, consumption and malaria. It frequently results from a change of climate and surroundings and the absence continues until the person becomes adapted to the new environment. It is seen in immigrants and in persons who move from the country into large cities. It is often caused by over-work, either physical or mental, and also by an insufficient amount and poor quality of food. It is quite common in school girls.

It is sometimes due to the excessive general development of fat, even in young women who are apparently in good general health. It is frequently associated with insanity. The fear of pregnancy after illicit intercourse sometimes produces it. Fright, grief, anxiety, anger and getting wet often cause it. In some cases it is hard to discover any cause. Persons subject to it may have a general periodical disturbance that marks the times at which the flow should occur.

SYMPTOMS.—There may be headache, flashes of heat, nervousness, nausea and vomiting and a feeling of fullness and pain in the lower bowel. Various skin eruptions may occur as the result of amenorrhea, as in other diseases of the female generative organs. The poor health, both mental and physical, that usually accompanies amenorrhea is often thought by the patient and her friends to be the result, rather than the cause as it really is, of the arrested menses.

TREATMENT.—This, necessarily, must depend upon the cause of the condition. If it is due to defective development of the womb and the ovaries, little can be done. For this a doctor must be called. Most cases demand general toning treatment. Regulate the mode of life. Fresh air, exercise, sunshine, baths and pelvic massage continued for a long time will help. There should be less of study and more of active outdoor life. Change of air and surroundings is sometimes helpful.

Allopathic Treatment.—Improve the general condition by giving a preparation composed of arsenic, iron and nux vomica. Take four tablets a day.

You can buy these tablets in any drug store. Or, Bland's pills are also very good. Take four pills a day. Fat should be decreased by diet and exercise. The bowels should be kept regular.

Homeopathic Treatment.—Put 15 drops of the second dilution of China into half a glass of water and give 2 teaspoonfuls every 3 hours for weakness resulting from an acute illness.

To blonde girls and women give the sixth trituration of Pulsatilla. Give 2 tablets 4 times a day.

To brunettes give the sixth trituration of Sepia. Give 2 tablets 4 times a day.

PEOPLE'S HOME REMEDIES.—

1. **Bitter Tonic.**—The following bitter tonic formula is a good one. Take 1 pound each of poplar bark, golden seal, columbo root and the bark of the root or bayberry; 6 ounces each of capsicum and cloves and 4 pounds of loaf sugar. Pulverize all, sift, and mix. The dose is from a teaspoonful to a tablespoonful 3 times a day. Or, you can put 1 ounce of this mixture into a quart of wine and take a wine-glassful 3 times a day.

2. **Baths, Etc.**—In case of delayed or obstructed menstruation the patient should take a warm foot or hip bath twice a day a few days before the period. Upon retiring at night apply warm wet cloths to the lower part of the abdomen.

ACUTE SUPPRESSION OF MENSES DURING A MENSTRUAL PERIOD.

Causes and Preventive Treatment.—

The causes are getting wet and chilled. Excitement, grief and anger also cause it. Taking cold is another cause of suppression of the menses and the flow is sometimes checked by taking vinegar.

In the chapter for girls special attention is called to the care of girls just entering puberty. It might be well, even at the expense of repetition to emphasize what is there written. When a girl becomes "unwell" the first time she must give special care to herself, in addition to what has been taken before this time, in preparing herself physically to enter this period of her life.

She should not do anything that will cause much anxiety, worry, fatigue or sleeplessness. She must not study much. Girls frequently over study at this time and many are fearfully pale and run down and suffer much from headaches. Such girls should be kept out of school. Good health is of even more importance than a book education.

When the flow comes she should be quieter than usual and be careful not to take cold. She should not get her feet wet. If her shoes are wet they must be changed immediately. Taking cold is a common cause of the stopping of the flow. Some girls and women seem to be able to do almost anything at this time but such is not the case with many and even those who do not suffer at the time are likely to reap the effects in later life.

The idea of a girl's going to school when she is first unwell or at any time when she is unwell and sitting for hours with wet shoes, stockings and skirts is monstrous and yet this is frequently done. How many girls and women go to a dance when they are unwell and dance themselves into a perspiration, then go to a cooler part of the building and sit down without any extra wraps! The result is a cold and the stopping of the flow for that time.

The next time the menses are likely to be painful and the flow clotted and watery and the girl is in luck if she is able to be up and around. If she escapes inflammation of the womb and congestion and inflammation of the ovaries she is very fortunate. Girls and women cannot take too good care of themselves during the menstrual period.

TREATMENT.—

Rest in bed and take good hot foot baths or sitz baths. A sitz bath is taken by sitting over steam arising from a pail of hot water. Take hot drinks or herb teas made from hops, tansy or pennyroyal. These should be taken until they cause free sweating. Apply warm fomentations of hops or other herbs to the lower part of the abdomen. The object is to produce sweating and if this is done soon after the suppression the flow is very likely to be started again.

Aconite taken in $\frac{1}{5}$ -drop doses every hour for 6 hours will also aid. Take special care of yourself during the succeeding interval and when it is time for the next period. A bitter herb tonic, such as that given for amenorrhœa, is good to be taken during the interval if you need upbuilding. Unicorn root, beth root or blessed thistle is also good in the tea form.

Some years ago a friend called my attention to the virtue of the bark of boxwood when made into a tea for girls with disordered menses. My friend learned of this through his mother who had a great knowledge of herb remedies. Since then I have frequently had occasion to prescribe this tea and have found it of great value in such cases. Make the tea by using 2 ounces of the bark of boxwood to a pint of water and drink an ounce of this tea three times a day.

If you are married and the menstruation is very slight when you have usually been regular and had a free flow, then it may be that you are pregnant. In such a case, of course, you are not to use anything to bring on the flow. The above treatment is only for suppression from the causes above given.

PEOPLE'S HOME REMEDIES.—

1. **Tansy, Hops, Pennyroyal, Ginger, Etc.**—For suppression of the menses apply hot poultices of tansy and hops to the abdomen and drink freely of tansy, pennyroyal, ginger or motherwort tea. These are all good.

2. **Verwine Tea.**—For suppressed menses a tea made of verwine root is highly recommended. Take half a teacupful 3 times a day for a few days before time for the menses.

SCANTY MENSTRUATION.

Causes and Treatment.—

The causes and treatment are somewhat similar to those given for amenorrhœa. Attend to any womb trouble that may be the cause.

Before leaving the subject of suppressed menstruation from getting wet or cold and like causes I want to impress upon mothers the necessity of attending to this trouble immediately. By so doing you will save your daughters from much trouble, pain and suffering.

EXCESSIVE MENSTRUAL FLOW—(MENORRHAGIA).

Causes.—The causes are inflammation of the womb, ovaries or tubes; fibroids or tumors of the womb; and debility or a general run down condition.

TREATMENT.—

Remove the causes by attending to the diseases and build up the system with tonics.

Allopathic Treatment.—Take pills or tablets made of arsenic, iron and nux vomica. Take 4 tablets a day. These may be bought at any drug store. The compound tincture of cinchona and gentian used together as a bitter tonic is also good. Use equal parts of each and take a teaspoonful every 4 hours.

Homeopathic Treatment.—Every 3 hours alternate the second dilution of China with the third dilution of Phosphoric Acid. Prepare by putting 10 or 15 drops of each of these medicines into separate glasses half full of water. Give two teaspoonfuls of either at a dose.

Herb Remedies and Combinations.—The bitter tonic given under amenorrhea is good for this trouble.

Another good remedy is to take 1 ounce of prickly ash bark, 3 ounces of ginger root, 3 ounces of wild cherry bark, 5 ounces of balmony, 5 ounces of golden seal, 7 ounces of poplar bark and $2\frac{1}{2}$ pounds of good sugar. All are to be made fine, sifted, and well mixed. The dose is a heaping teaspoonful in a little boiling water 3 times a day.

Columbo root, orange peel, unicorn, prince's feather and Solomon's seal are all good.

Five drops of oil of fireweed every 1 to 3 hours is very good when the bleeding must be stopped quickly. Put this on sugar and take internally. This remedy is also very good for dysentery.

When a girl or woman has menorrhagia from debility, these bitter tonics and restorative medicines will do much good. If the trouble is due to fibroid tumors of the womb, or to inflammation of the womb, ovaries or tubes, of course such conditions must be treated.

PEOPLE'S HOME REMEDIES.—

1. **General Instructions.**—In case of profuse menstruation the patient should lie down upon the bed and eat and drink nothing of a stimulating nature. Keep the room cool and the patient lightly covered. The feet should be put into warm water. If the flow is excessive the hips should be elevated higher than the head and cloths wrung out of vinegar and water should be applied to the lower part of the abdomen.

2. **Charcoal, Geranium and Alum.**—For profuse menstruation take equal parts of powdered charcoal, geranium and alum. Mix these and give 15 grains every 10 or 20 minutes.

3. **Cinnamon and Red Raspberry Leaves.**—For profuse menstruation drink freely of a tea made of red raspberry leaves and cinnamon bark or cinnamon bark alone. This remedy will be found very effective.

4. **Alum and Nutmeg.**—For profuse menstruation a Philadelphia physician recommends the following simple but effective prescription. Take 5 to 20 grains of powdered alum and 2 grains of grated nutmeg. Mix this into a powder and give every hour in syrup made of white sugar.

**PAINFUL AND DIFFICULT MENSTRUATION—
(DYSMENORRHEA).**

CAUSES.—This trouble is very common among girls and women. Taking cold at or just before the menstrual period and thus causing suppression

or partial suppression of the flow at the time, is one of the causes of this trouble and especially is this true if this carelessness is repeated or continued. Women should be very careful not to do anything to cause either an entire or partial suppression of the menstrual flow. The main causes of this disease are womb troubles; laceration or tearing of the neck of the womb, generally caused by childbirth; displacements, backwards and forwards, partially closing the cervical canal; and stenosis which is the almost entire closing of the mouth of the womb and consequent narrowing of the cervical canal. In unmarried women stenosis is the most frequent cause. In married women the causes are disease, displacement, inflammation and stenosis.

SYMPTOMS.—Pain is the main symptom and it is very severe.

TREATMENT.—

The treatment is to give hot teas and drinks and hot foot baths or sitz baths. Apply the hot water bag over the womb or hot fomentations of hops. During the interval the bitter tonic given under "Amenorrhœa" is good. For the spasms and pain, motherwort, ginger or valerian may be united with other herb remedies. The "Mother's Cordial" given under "Leucorrhœa" is also good to build up the system. First use the means mentioned but if the womb is displaced or the canal is too small the doctor must attend the case. It may be necessary to dilate the cervical canal or curette the womb.

Homeopathic Treatment.—Put 10 drops of the first dilution of *Cocculus* into a glass $\frac{1}{3}$ full of water and give 2 teaspoonfuls every 10 minutes until relieved.

During the intervals give one tablet 4 times a day of the third trituration of *Pulsatilla* or use the sixth trituration of *Sepia* in the same way.

PEOPLE'S HOME REMEDIES.—

1. **Unicorn Root.**—It is best in powder or tincture form. Take from 5 to 10 grains of the powder 3 times a day. The dose of the tincture is 5 drops in water 3 times a day and the dose of the fluid extract is from 15 to 20 drops. This may be combined with other remedies.

2. **Cramp Bark.**—Cramp bark or high cranberry bark is good for painful menses. The dose of the decoction is 2 ounces 2 or 3 times a day. The dose of the fluid extract is from 15 to 30 drops. This may also be combined with other remedies.

3. **Blue Cohosh.**—A tea made by boiling an ounce of blue cohosh in a pint of water is good for dysmenorrhea. The dose is from 1 to 4 ounces 3 or 4 times a day. This is a womb tonic and may be combined with black cohosh and unicorn root. You can then use the fluid extract, the dose of which is from 15 to 20 drops. These remedies work best in combination.

METRORRHAGIA.

This usually means an excessive flow between the menstrual periods.

CAUSES.—The causes are chronic inflammation of the lining of the womb, polypus, cancer, or fibroid tumors in the womb.

TREATMENT.—

Remove the causes. Treat the inflammation and remove the polypi and fibroids. Keep up the health by tonics such as tablets containing arsenic, iron and nux vomica. These tablets can be bought at any drug store. Use bitter herbs such as columbo, gentian and cinchona.

Homeopathic Treatment.—Put 10 drops of the second dilution of *China* into half a glass of water and take 2 teaspoonfuls every 2 or 3 hours.

DISEASES OF THE VULVA.

Description of the Parts.—The vulva is the outside fleshy part that protects the opening to the vagina. About half an inch above this opening is the opening of the urethra and above this is the clitoris. The fleshy part is made up largely of the labia majora and labia minora, or the large and small lips. Between the opening of the vagina and the anus, or opening of the bowel, is a muscular part called the “perineum.” This has a great deal to do in labor and is generally torn to a greater or less degree; sometimes back to and into the bowel. This is caused by a difficult labor and carelessness. The perineum makes up part of what is called the pelvic floor. This floor supports the structure above (vagina, womb, etc.) and when this gives way the supports or ligaments have too much to hold and hence sag, causing falling of the organs.

INFLAMMATION OF THE VULVA—(VULVITIS).

This is not a common disease.

CAUSES.—Gonorrhea is a frequent cause of vulvitis. The disease is also caused by irritating discharges from the vagina and also by sweat, smegma, urine, thread worms, and uncleanness and especially in hot weather.

SYMPTOMS.—The mucous membrane is swollen and red and an abundant discharge covers the parts. There is local pain. Sometimes one of the lips only is affected and an abscess forms.

TREATMENT.—

If an abscess forms it should be opened early and scraped. Rest in a lying position and observe cleanliness. Separate the lips and bathe and clean frequently with warm water. After bathing and cleansing the parts a local wash of boracic acid will be found good. Use a dram of boracic acid to a pint of water. If it comes from gonorrhea use a 2 per cent. solution of nitrate of silver locally after the parts have been thoroughly cleansed. All parts must be thoroughly treated. If of gonorrheal origin the disease may remain at the mouth of the urethra, in the ducts of the glands, etc. All traces of the disease must be eradicated before the patient is discharged for the septic material may be carried from the diseased organs to the vagina, womb, tubes and ovaries with terrible results. Any inflammation of the urethra must also be properly treated.

INFLAMMATION OF THE VULVO-VAGINAL GLANDS.

These glands are two in number, about the size of a bean and are situated deep in the inner part of the large lips or labia majora. The duct of the gland is about an inch long. This duct usually becomes inflamed in vulvitis and the inflammation may extend, producing an abscess of this gland. Inflammation may also occur separately from septic or gonorrheal infection. When the duct alone is inflamed it should be laid open with scissors and knife and cauterized with nitrate of silver stick or pure carbolic acid. Of course a physician will be required for this operation.

SUPPURATION OF THE VULVO-VAGINAL GLANDS.

Symptoms.—This is accompanied with marked swelling which may extend to the anus, or opening of the bowel. Pain is always severe. Suppuration is first apparent on the inner surface of the large labia or lips. If not

treated openings appear and it becomes chronic. A thin, milky or greenish, matter-like fluid may be pressed out of the duct or the fistulous openings. Infection from this discharge may be communicated to man, or may ascend the genital tract producing inflammation of the womb or of the fallopian tubes.

TREATMENT.—

Make a free cut immediately into the lip at the junction of the skin and mucous membrane, wipe out the interior with carbolic acid and pack the cavity with gauze. If chronic, the hardened gland, duct and fistulous tracts must be cut out and the wound packed with gauze. Sometimes the wound is closed immediately with catgut sutures. This condition is quite frequent. It is sometimes caused by injuries and it sometimes comes during pregnancy when it must be immediately attended to for the reasons given above.

ITCHING OF THE VULVA—(PRURITUS VULVA).

CAUSES.—Itching of the vulva is a very annoying trouble. The causes are many. Eruptions of the vulva, such as eczema; irritating discharges from the vagina and womb; cancer of the womb; thread worms and irritation from diabetic urine are among the causes. Diseases of the womb, tubes and ovaries are also causes and sometimes it is impossible to find the cause. It is sometimes very severe during pregnancy.

SYMPTOMS.—The itching may be so severe that the woman cannot refrain from scratching and rubbing the parts on all occasions. She becomes debarred from the society of her friends and seeks relief in anodynes and hypnotics. The itching may extend into the vagina, to the skin of the abdomen, to the inner part of the thighs and to the anus.

TREATMENT.—You must find the cause if possible. Examine any vaginal or uterine discharge. Discharges from the womb may be absorbed by placing a pledget of cotton against the womb and removing frequently so that the discharge does not touch the vulva; or, the parts may be kept clean by frequent douches. In children, examine the stools for pin worms. Examine the urine for diabetes. Treat diseases of the uterus, tubes and ovaries. When no local cause can be found treat the general nutrition of the patient. A gouty condition or alcoholic drinks, rich food, fish and shell fish may cause it. In case of diabetes keep the parts clean of the urine by drying after each urination and dusting with a powder consisting of equal parts of subnitrate of bismuth and prepared chalk. The following applications are also good but they are poison and should be used with care. Mix $\frac{1}{2}$ grain of bichloride of mercury with an ounce of emulsion of bitter almonds and apply twice a day; or, twice a day apply a powder consisting of 1 grain of morphine and 2 grains of prepared chalk. Another good preparation is made by mixing 1 dram of carbolic acid with 5 drams each of tincture of opium, tincture of iodine and tincture of aconite. Apply once or twice in 24 hours.

PEOPLE'S HOME REMEDIES.—

1. **Borax Water.**—As an application for itching of the private parts use a solution made by dissolving an ounce of borax in a pint of rain water.

2. **Green Tea.**—Green tea, when not too strong, is a good application for itching of the privates.

3. **Alum Water.**—Weak alum water is a good wash for this troublesome disease.

WARTS OF THE VULVA—(PAPILLOMA).

Causes.—These are usually the result of gonorrhea or syphilis but they may be caused by irritation from filth or by the leucorrhœa of pregnancy.

TREATMENT.—

Small ones should be picked up with forceps and clipped off with curved scissors. Large ones should be cut off and the wounds closed with stitches.

ADHESIONS OF THE CLITORIS.

This organ is somewhat similar to the male organ and is situated above the urethral opening and is partly covered by the folds of the vulva. Adhesions, between the glans clitoris proper and the hood which covers it, are exceedingly common. No trouble may come from this unless an accumulation of smegma or thick secretion takes place or irritation is produced by the presence of any hard substance. This should always be looked after in a child who has any irritation or redness around the vulva. Little girls frequently put their hands there and rub. In such a case the parts must be examined. You will then be very likely to find the parts adherent or dirty the same as is often the case with the penis in a boy. The irritation causes rubbing of the parts and often the child becomes an involuntary masturbator.

TREATMENT.—

The adherent parts should be loosened. This is easily done and the raw surface should then be covered with clean vaseline and the patient should keep from walking as long as there is pain. The hood should be drawn back and the vaseline applied every day for two weeks to prevent adhesions.

I once treated a little child a few months old who had slight convulsions. After freeing the clitoris of the hood the convulsions ceased. If you see children of either sex frequently putting their hands to their private parts, those parts are either dirty or adherent and need attention. Bad habits can be prevented by timely attention to this trouble and the operation is very easily performed.

DISEASES OF THE VAGINA.

Description of Parts.—The vagina lies back of the bladder and in front of the rectum and extends from the vulva to the womb. The vagina extends upward and backward as a transverse slit in the pelvic floor. It is the canal leading from the vulva to the womb. The front wall is $2\frac{1}{2}$ inches long and the back wall is $3\frac{1}{2}$ inches long. The walls are triangular in shape, being broader above than below. At the upper end the cervical portion, or neck, of the womb can be seen. This cavity is lined with mucous membrane and this is subject to disease.

LEUCORRHEA—WHITES.

Causes.—This is a very common and a very annoying trouble. It is caused by diseases of the ovaries, tubes, vagina and womb. It is also caused by a tear of the cervix, ulceration, debility, anemia, chlorosis, etc. A relaxed condition of the vagina and surrounding parts and suppressed and irregular menses also cause it. Frequently it comes before and after the menstrual period. It is a symptom in many diseases.

Symptoms.—There is a constant oozing of a thin white matter from the vagina. Sometimes this matter is yellow or brown. There is pain in the

back and loins and this pain is increased by exercise. There is a wasting away of the flesh and a weary and dejected look. Sometimes the discharge is irritating and offensive.

TREATMENT.—

If the disease is caused by systemic trouble, such as chlorosis, the system should be built up with tonics. If it comes from diseases of the womb, etc., these diseases should be treated. There are many ways of treating it locally—by douches, vaginal cones, etc. Injections are certainly good for leucorrhea. Before using medical injections it is well to wash out the vagina with warm water and some antiseptic solution like carbolic acid (1 teaspoonful to a pint of water), listerine, glyco-thymoline, etc. Then, when the vagina is cleansed, use some healing medicine like a tea or decoction made from golden seal, witch hazel, tannic acid or white oak bark. Golden seal is good but it stains the clothing. Lloyd's hydrastis, or golden seal, is colorless but you must use more of it. Use 4 teaspoonfuls of it to a pint of water as an injection. These injections and hot water injections are good cleansers and healers. Boric acid, beth root or pinus canadensis also make good injections. The following is a good injection. Take cranesbill, witch hazel, black cohosh and golden seal, half an ounce of each, coarsely bruised, and boiling water 1 quart; mix the articles thoroughly and steep with gentle heat in a closed vessel for two hours; remove from the fire and strain. This is a fine injection for leucorrhea, and falling of the womb and bowel.

From 10 to 30 drops of tincture of myrrh three times a day is good for leucorrhea. The following is a good tonic for leucorrhea and falling of the womb. Mix $\frac{1}{4}$ ounce of comfrey root, 2 ounces of elecampane root and 1 ounce of horehound and add 3 quarts of water. Boil from 3 quarts down to 3 pints; strain, and add while warm, $\frac{1}{2}$ ounce of powdered beth root, 1 pint of brandy and 1 pound of loaf sugar. The dose is from $\frac{1}{2}$ to $\frac{2}{3}$ of a wine-glassful 3 or 4 times a day.

Attend to the diseases that produce leucorrhea; take tonics and strengthening remedies and take plenty of exercise. Some good home remedies are given and the "Mother's Cordial" will be found especially good.

PEOPLE'S HOME REMEDIES.—

1. **"Mother's Cordial" or Compound Syrup of Partridge Berry.**—This is a uterine tonic and is a good remedy for leucorrhea, amenorrhea, dysmenorrhea, menorrhagia, spasms, cramps, and to overcome a tendency to miscarriage. The dose is from 2 to 4 ounces 3 times a day. One or two doses daily for several weeks before confinement is good. Take 1 pound of partridge berry, 4 ounces of helonias root, 4 ounces of high cranberry bark and 4 ounces of blue cohosh root. Grind and mix the articles together; place in a convenient vessel; cover with fourth proof brandy and steep for 3 days. Then transfer all to a filtering apparatus and gradually add brandy until 3 pints of the spirituous tincture have been obtained, which reserve. Then continue the filtering with hot water until the liquid passes tasteless. Add to this 2 pounds of granulated sugar and evaporate with gentle heat to 5 pints; remove from the fire; add the reserved 3 pints and flavor with essence of sassafras.

2. **Restorative Bitters.**—The roots and flowers used should all be bruised. Take 1 ounce each of comfrey root, Solomon's seal root and spikenard root; $\frac{1}{2}$ ounce each of chamomile flowers, columbo root and gentian root; 4 pints of sherry wine and a sufficient quantity of boiling water. Place the herbs in

a vessel, cover with boiling water and allow the compound to steep for 24 hours, keeping it closely covered; then add the sherry wine, steep for 14 days, press and filter. The dose is from $\frac{1}{2}$ to 2 fluid ounces 3 or 4 times a day. This is a very good tonic for all diseases peculiar to females and it is especially good for leucorrhea, menorrhagia, amenorrhea, weak back, etc.

3. **Solomon's Seal, Spikenard, Wild Cherry, Peach Root, Etc.**—Take 1 ounce each of bruised spikenard root, Solomon's seal root, gentian, wild cherry bark and peach root; add 4 pints of boiling water; simmer slowly to 1 pint and then add 4 pints of native wine. Steep for 4 days, press, filter and add 2 ounces of loaf sugar. The dose is from $\frac{1}{2}$ to 2 fluid ounces 3 or 4 times a day. This is good for leucorrhea and other female troubles.

4. **Pulverized Egg Shells.**—Burnt and pulverized egg shells are a good remedy for leucorrhea. The dose is 10 grains in sweetened milk.

5. **Alum Water.**—If the leucorrhea is from the womb take 1 dram of tannic acid, $\frac{1}{2}$ ounce of pulverized alum, and 1 quart of water and use half this quantity night and morning as an injection.

6. **Alum and Honey of Roses.**—Mix 1 dram of alum with 1 ounce of honey of roses and 3 ounces of water. Put a tablespoonful of this into a cup of water and use as an injection twice a day.

7. **Green Tea.**—For leucorrhea take a sitting bath every day and use injections of tepid water 3 or 4 times a day. Injections of weak green tea are excellent for many cases.

8. **Cider and Alum.**—Injections of sweet cider or a weak solution of alum are excellent in many cases of leucorrhea.

9. **Borax and Poppy Heads.**—Add $1\frac{1}{2}$ ounces of pulverized borax to a pint of tea made from poppy heads and use this as an injection. This is fine for whites, or leucorrhea.

10. **Tannic Acid and Alum.**—Keep the bowels open and use injections made by dissolving an ounce of alum and 3 drams of tannic acid in a quart of water. One-third of this quantity should be used as an injection 3 times a day for leucorrhea.

11. **Black Cohosh and Tannic Acid.**—An excellent injection for leucorrhea is a decoction of black cohosh root with from 1 to 3 drams of tannic acid added.

12. **Golden Seal and Cranesbill.**—A strong decoction made by using 2 parts of golden seal to 1 part of cranesbill is a very valuable injection for leucorrhea.

13. **Beth Root.**—From 2 to 4 ounces of a tea made of beth root is good for leucorrhea when taken internally 3 times a day. It is also good as an injection.

14. **Witch Hazel.**—After the vagina has been thoroughly syringed and cleansed use witch hazel as an injection. Half an ounce in water is usually used at each injection but in severe cases it may be used half strength.

15. **Golden Seal.**—Injections of golden seal tea are fine for leucorrhea.

16. **Hemlock Spruce.**—A strong decoction of hemlock spruce is good for leucorrhea when taken internally and is especially good when used as an injection. It is also good for falling of the womb.

INFLAMMATION OF THE VAGINA—(VAGINITIS).

In simple vaginitis the membrane remains smooth. Granular vaginitis is

the kind usually seen and in this the papillæ are infiltrated with small ones and are much enlarged so that the inflamed part has a granular appearance.

SYMPTOMS OF THE ACUTE FORMS.—There is a dull pain and a sense of fulness in the pelvis which is increased by walking, standing, and emptying of either the bowels or bladder. There is also a free discharge of serum or pus which may be mixed with blood. The character of the discharge depends upon the kind and period of the disease. If the acute form is neglected it may pass into the chronic form. It usually lingers in the upper parts of the vagina in the corners and especially is this true if the vaginitis is of gonorrheal origin. By careful inspection we find here one or more granular patches of inflammation which cause a vaginal discharge from which man may be infected and from which infection of the upper portion of the genital tract, the uterus, and fallopian tubes may be derived.

TREATMENT.—

Vaginitis, especially that of gonorrheal origin, should be treated vigorously and thoroughly until all traces of it are gone. Keep as quiet as possible and move the bowels with epsom or rochelle salts. Take, 3 times in 24 hours while lying upon the back, a vaginal douche of boracic acid solution, using 1 dram of boracic acid to a pint of water. The temperature of the solution should be 100 degrees. If the disease comes from gonorrhea a warm bichloride of mercury solution should be used in the same way, using 1 part of the medicine to 5,000 parts of water. After the acute symptoms have disappeared local application can also be made in addition to the douches. Clean the vaginal surfaces gently with warm water and cotton. If there is much pain apply a 4 per cent. solution of cocaine to the surfaces; then the entire vaginal surface should be painted with a solution of bichloride of mercury (1 to 1,000). Apply daily until cured, continuing the douches. Tablets of bichloride of mercury, or corrosive sublimate as it is also called, can be bought at any drug store and of any strength.

In simple vaginitis you can use douches of boracic acid, 1 dram to a pint of water, and afterward inject a solution of golden seal, witch hazel or white oak bark. These last are to be used after the acute symptoms are past and no doctor can be obtained. Warm salt water is also good.

Homeopathic Treatment.—In the first stages use the second dilution of Aconite and after the first 24 hours use the third dilution of Belladonna. When there is a mucous discharge use the third trituration of Mercurius.

DISEASES OF THE WOMB.

FALLING OF THE WOMB—(PROLAPSUS UTERI).

Complete prolapsus or falling is when the womb protrudes outside the vagina. This is very unusual.

CAUSES.—One cause is injury to the pelvic floor caused by tearing the perineum during childbirth. Other causes are relaxation of the womb ligaments from too frequent labor, old age, weakness, heavy lifting and falls or anything that tends to weaken the supports or ligaments. Getting up too soon after labor by those whose labor is very hard is also a cause.

SYMPTOMS.—The symptoms are backache, weakness of the legs, a bearing down feeling like the parts would come out and crossing of the legs. The pain in the back frequently disappears when lying down. Headache

situated in the back part of the head, pain extending down the back part of the thighs and irritation of the bladder and bowels are other symptoms. You can feel the opening of the womb low down in the vagina. This disease is readily diagnosed by examination of the vagina.

TREATMENT.—

First of all restore the perineum by operating. Rest in bed and assume the chest position 3 or 4 times a day for from 5 to 15 minutes at a time. Put the chest on the bed, draw the knees up and rest on them and the chest. This position throws the womb up and forward. Keep the bowels open. Use one or two hot vaginal douches each day of a 1 to 4,000 bichloride solution or use home remedies as injections. Witch hazel is very good or beth root or white oak bark tea. These injections should be continued for a long time. Make a strong infusion of witch hazel and inject twice a day. If the womb has completely protruded it must be put back carefully with the hands if it cannot be put back by assuming the knee-chest position. In this trouble the womb often comes out after a stool. You should then use the bichloride douche as it is cleansing and thoroughly antiseptic. Or, if you do not have this solution you should wash the womb with warm witch hazel tea; then anoint the fingers with vaseline and gently push the organ back into the vagina. Then inject cool witch hazel and remain in bed for several days. Continue using the witch hazel as an injection. Use the bed pan for the bowels and the urine so as to avoid getting up. Frequently assume the knee-chest position.

If the perineum is in good condition, pessaries or supports are found useful in many cases. Some women make tampons and put them into the vagina. If these are used they should be changed frequently. Stem pessaries or supports are good but are unpleasant to wear and in time the hard rubber may irritate the womb. I have found Farr's Prolapse Uterine Supporter, of the stem kind, to be very good. This pessary is made of rubber that gives enough to be worn very comfortably and successfully. The medium size is usually the one to order. These pessaries are made in Boston. I placed one in a lady about 60 years old who was suffering with almost complete prolapsus or falling of the womb. She wore it for years with comfort and success and ordered another when the first was worn out.

PEOPLE'S HOME REMEDIES.—

1. **Alum, Geranium and White Oak Bark.**—For falling of the womb use as an injection a tea made with a pint of water and 1 ounce of either geranium or white oak bark. A solution of an ounce of alum in a pint of water is also a fine remedy.

Physician's Remarks.—These are all good for they are astringents.

2. **Hops, Solomon's Seal and Peach Leaves.**—For falling of the womb make a tea of equal parts of hops, Solomon's seal and peach leaves, and use this as an injection. If there is heat and difficulty in passing water drink a tea made of spearmint and marshmallow.

Physician's Remarks.—Solomon's seal is astringent, peach leaves are slightly so, and the hops are quieting.

BENDING FORWARD OF THE WOMB—(ANTEFLEXION).

Anteflexion is an unnatural bending forward of the womb. The womb is naturally bent forward a little and especially when the bladder is empty.

This bending forward becomes a disease when the bend in the cervical canal is sufficient to impede the escape of the menstrual and other uterine discharges.

SYMPTOMS.—The most prominent symptom is dysmenorrhea or painful menstruation. Violent pains in the center of the abdomen, extending down the thighs, occur several hours before the flow begins. In the later years of the disease the pain extends to the whole of the pelvis and the back. Nausea and vomiting may be present during the height of the pain. When the flow has started the pain is relieved and may be absent during the remainder of the menstrual period. The blood is clotted during the first part of the flow. Unless relieved by pregnancy or by proper treatment the trouble will continue. The suffering increases with time. Inflammation of the womb, tubes, and ovaries follow old cases of antelexion. Sterility usually accompanies well marked cases.

TREATMENT.—

If pregnancy occurs and runs a normal course the disease will be cured. Miscarriage, however, is very likely to occur during the early months of pregnancy and especially in cases of long standing. The object of the treatment is to straighten the cervical canal. The use of the stem pessary is dangerous. The best method is rapid forcible dilation by a competent operator. This should be done one week after the menstrual period. Antelexion is usually a disease of the unmarried or sterile woman.

RETROVERSION AND RETROFLEXION OF THE WOMB.

Retroversion means a turning back of the womb and retroflexion means a bending backward of the uterine or womb axis. Usually both retroversion and retroflexion exist together.

CAUSES.—They may be congenital. Falls, blows, twisting of the body, or sudden efforts of lifting may be the cause. Labor is probably the most frequent cause. If a woman leaves her bed or goes to work too soon after miscarriage or labor many conditions are present that favor these troubles. The womb is then larger and heavier than usual; the uterine ligaments, vagina, and vaginal opening are relaxed and the support of the pelvic floor is consequently deficient; the abdominal walls are relaxed and the holding power of the abdomen is lessened. These causes also favor falling of the womb. Retroflexion is a disease of women who have been pregnant and have borne children.

SYMPTOMS.—In these cases there is serious disarrangement of the circulation and this results in enlargement of the womb and chronic congestion or inflammation of its lining. There is also an irritable bladder with painful and frequent urination in many cases. Pressure of the body of the womb upon the rectum may also cause constipation and nervous trouble. The rectum often feels obstructed and piles may occur. Backache situated in the upper part of the sacrum and headache on either the top or at the back of the head and a feeling of weight and dragging in the pelvis and extending down the thighs are symptoms of these troubles. Physical weakness or inability to stand or walk more than a short time is often very marked. Congestion of the ovaries may result and then there is pain in the ovarian region. Menorrhagia and leucorrhea occur and menstruation is usually painful. At the menstrual period the backache headache, ovarian pain and bladder disturbance are increased.

TREATMENT.—

Vaginal pessaries of proper shape and size should be worn. These must be of such shape and size that they may be worn without feeling them. They must not cause pain. The womb should be replaced before the support is introduced. The woman who wears a support should be under a doctor's observation that he may see how it acts and if the displacement is cured. The womb is sometimes operated on for these troubles. Ventro-fixation or ventro-suspension of the womb and shortening of the round ligaments are the treatments. Of course these operations are to be performed only as a last resort and by a competent man.

LACERATION OF THE NECK OF THE WOMB—(LACERATION OF THE CERVIX UTERI).

Laceration or tearing of the neck of the womb is of very frequent occurrence. In almost every case of labor there is tearing of this part to a greater or less extent. The majority of cases heal without causing any trouble. These lacerations may be large or small.

SYMPTOMS.—Leucorrhea is usually present; menstruation may be irregular and increased in duration; and backache and headache may be present. If the tear is extensive, pelvic pain may be experienced. Sometimes very marked nervous disturbances are caused by laceration and especially if there is very much scar tissue. Neuralgia may occur and is usually situated in the pelvis.

TREATMENT.—

All forms of laceration of the cervix in which there exist erosion, eversion (turning out), cystic degeneration, and sclerosis (hard tissue) should be operated on. In women approaching middle life or the age of forty all lacerations of the cervix should be closed whether or not they produce symptoms. Cancer of the neck of the womb is most likely to begin in an old laceration and the woman should be protected against this danger. The operation is called "trachelorrhaphy" and consists of freshening or excising the tissues of the torn surfaces and bringing the freshened edges together with sutures. This operation is very successful and is not especially severe or dangerous.

CERVICAL CATARRH—(ACUTE AND CHRONIC).

This is an inflammation of the cervical mucous membrane. The cervix, or neck, of the womb is the lower part of the womb and looks like the small end of a large pear. Through the center runs a channel called the cervical canal and this continues to the inner opening and into the womb cavity. At the outer or lower end of this canal the opening is called the external os (mouth); at the inner end the opening is called the internal os. Between these openings is the so-called cervical canal which is widest in the center. Cervical catarrh is an inflammation of the walls of this canal.

Acute Cervical Catarrh.—This occurs generally as a part of a general acute process affecting the whole inner lining of the womb and is commonly the result of gonorrheal or septic infection. It will be considered under "General Endometritis."

Chronic Cervical Catarrh.—This is a chronic inflammation of the mucous membrane of the cervical canal. It is an exceedingly common affection.

Unless it is caused by gonorrhea it is nearly always secondary to some local or general condition. The discharge is a thick tenacious mucus and differs decidedly from the vaginal mucus. It is often opaque, rarely pus, and seldom streaked with blood. The mucous membrane becomes swollen and may project or prolapse beyond the limits of the external opening so that the opening has a ring around it of red and congested mucous membrane like the eyelids in conjunctivitis. This inflammation may extend to the vaginal part of the cervix. The most usual secondary cause of this trouble is laceration of the cervix. Also, the various displacements of the womb are often accompanied by this trouble. Frequent douches of cold water to prevent conception are said to be a cause. Gonorrhœa seems in many cases to be communicated directly and primarily from the male to the cervical mucous membrane and this results in a most obstinate form of chronic inflammation and if not properly treated may cause terrible disaster by causing disease of the organs beyond.

SYMPTOMS.—The most conspicuous symptom is the leucorrhœa with thick, tenacious, opaque mucus. The quantity is often so great that the clothes of the woman are soiled and she is obliged to wear a napkin. There may be slight backache and a feeling of vague discomfort or pain in the pelvis.

TREATMENT.—

Find the cause and treat it. Attend to the laceration or displacement. If caused by scrofula, syphilis or tuberculosis, treat these conditions. Local treatment by douches aids the cure. Give some general tonic treatment such as Blaud's pills, the prescription for which is here given. Take 2 drams each of *pulv. ferri sulph. exsic* and *potass. carb. puræ*; make into a mass; divide into 48 pills and take 3 or 4 a day. Bitter tonics and tonic herb remedies are good. Local treatment must be administered carefully. A great deal of harm is done and especially by the application of harsh remedies and by the unclean way in which they are so often applied. Injections of golden seal and witch hazel often do good. Warm water is also a good injection. The gonorrheal kind will be treated later.

CANCER OF THE CERVIX OR NECK OF THE WOMB.

This is a very common disease. About one-third of all cases of cancer in women affect the womb. It appears at almost every period of life except infancy but it occurs most frequently between the ages of thirty and fifty. Cancer of the cervix is a disease of the child-bearing woman. It is very rare in women who have never been pregnant. The stout and well nourished mother of a large family is very likely to have cancer of the cervix.

CAUSES.—The chief predisposing cause of cancer of the cervix is a laceration or tear caused by miscarriage or labor. Cancer of the vaginal cervix very often begins in the mild erosion of an old laceration. True ulceration, as a mild condition, is very rare in the cervix; so, when an erosion turns into an ulceration it should always excite the gravest suspicion. It may extend to the vagina, to the body of the womb, to the broad ligaments, the bladder, rectum, and to the peritoneum and may be carried by the lymphatic vessels to the pelvic and inguinal glands.

SYMPTOMS.—A study of the early symptoms of cancer of the cervix is of greatest importance. In the early stages the disease may be eradicated with every probability of permanent cure. The great majority of women with cancer of the cervix come to the operator when the disease has extended

too far to permit of any radical treatment. The usual symptoms are bleeding, pain and discharge. The bleeding often appears first as a menorrhagia which is an increase in the amount of blood lost at the normal menstrual period. The loss may be greater and the period longer. In other cases slight bleeding appears between the menses and a spot of blood may be noticed upon the clothing. The leucorrheal discharge may occasionally be streaked with blood. The patient usually discharges blood after long walking or standing, or physical work, or after straining at stool or very often after sexual intercourse. If the "change of life" has been passed the bleeding may appear as a re-establishment of menstruation. It may occur with more or less regularity every month or every 3 or 4 months or it may appear as an occasional loss of blood after unwonted effort. Such flow in a woman over 30 years of age demands immediate and careful physical examination. Any bleeding from the vagina in a woman who has passed the "change of life" should arouse the gravest suspicion. Pain is not a constant accompaniment of this disease in the early stages nor is it in any way characteristic. In some cases it is absent entirely. The pain, when present, may be dull or it may be sharp and piercing.

The discharge may be present in cancer of the cervix before there are any symptoms of bleeding or pain. It may first appear as an ordinary cervical leucorrhea in a woman previously free from such a discharge; or, it may appear as an increase of the accustomed leucorrhea. Later the leucorrhea becomes pus-like in character and streaked with blood. It becomes thinner, constant and brownish. The pus and débris from the breaking down cancerous mass increase and a horrible odor characteristic of the later stages of cancer of the cervix appears. This odor is not peculiar to cancer but is caused by the sloughing tissue and is observed when such a process occurs in other conditions, as in sloughing fibroids. The discharge is irritating in character. **TREATMENT.**—

The treatment is a complete removal of the uterus or womb. To be a cure it must be done early so be on the lookout and discover the cause of all discharges from the vagina. They may be due to an eroded, ulcerated, lacerated cervix and need early attention. Many lives and much suffering can be saved if such symptoms are not neglected.

ACUTE INFLAMMATION OF THE WOMB—ACUTE CORPOREAL ENDOMETRITIS.

DESCRIPTION AND CAUSES.—Acute inflammation of the mucous membrane of the body of the uterus or womb is called acute corporeal endometritis. The disease is usually the result of septic infection occurring at a labor or miscarriage. Occasionally acute gonorrheal endometritis is seen but this disease usually produces an inflammation of the mucous membrane of the cervix and the body of the womb that is half-acute or chronic from the beginning. The acute variety can be caused by the use of the uterine sound. It is also sometimes seen in eruptive diseases.

SYMPTOMS.—Dull pain is usually present in the region of the womb and is referred to the supra-pelvic region and the sacrum. There is frequent and painful urination. The temperature in puerperal cases is very high. The discharge from the womb is very much increased, pus-like in character, and occasionally streaked with blood.

TREATMENT.—

In non-puerperal cases the patient should have rest in bed. Give vaginal douches of hot boric acid solution, using 1 dram of boric acid to a pint of water. Douches of a 1 to 4,000 solution of bichloride of mercury are also good. These douches should be taken at a temperature of 100 or 110 degrees. Continue the use of saline purgatives like epsom or rochelle salts. The homeopathic treatment is by the use of Aconite, Belladonna, Mercurius and Arsenicum. When, however, the disease occurs, as it often does, from septic infection at a miscarriage or labor more radical treatment must be used. This treatment comprises frequently repeated uterine douches and thorough curetting of the uterus which can only be done by a physician aided by an experienced nurse. It is now simply the so-called severe child-bed fever. Every case of acute inflammation of the body of the womb should be carefully watched and treated until the disease is cured. Acute inflammation of the womb, especially if gonorrhea is the cause, is very likely to become chronic and to extend to the mucous membrane of the fallopian tubes and to the ovaries.

CHRONIC INFLAMMATION OF THE WOMB.**Chronic Corporeal Endometritis.**

In practice this form is seen much more frequently than the acute form. It may occur as a primary disease but it very often occurs as a result of some other disease of the womb.

CAUSES.—The causes are various. It follows diseases of the womb and may result as a later stage of the acute form, or it may exist from the beginning in the chronic form. This is especially true when it is caused by gonorrhea. Here the invasion of the disease is slow and insidious and in the majority of cases is preceded by no determinable acute stage.

SYMPTOMS.—The menstrual function is usually affected. The period lasts longer, the loss of blood is greater and the periods are more frequent. The secretion is also increased and is thin and purulent in character and often streaked with blood. Pain is a general symptom and is referred to the lower portion of the abdomen and the back. There is headache in the top or at the back part of the head. Pain is worse when the patient is on the feet and is greater before and during the menses. There is great weakness and debility and the patient is nervous and hysterical with mental depression and melancholia.

TREATMENT.—

As this disease is usually secondary to some disease of the cervix or body of the womb, the treatment should be directed toward the cure of this first condition. Many mild cases can be relieved or cured by attention to the hygiene and habits and by applications to the vaginal aspect of the womb. Wear dresses which are loose around the waist and supported from the shoulders. Do less standing and walking. Take mild laxatives. Repeated exercise and massage are good. Use a vaginal douche and glycerine tampon. More radical treatment may be necessary and curetting of the womb may have to be resorted to.

FIBROID TUMORS OF THE WOMB.

These originate in the muscular walls of the womb. When they are situated in the muscular wall they are called "interstitial." When they grow out so that they project into the womb they are called "sub-mucous." The

whole womb becomes very much enlarged and the cavity is increased in length. We also have the "sub-peritoneal" variety of the fibroid tumor.

SYMPTOMS.—Bleeding is the chief symptom and is present in the great majority of fibroids.

TREATMENT.—

Operative treatment is usually demanded. These cannot be cured with medicine. Some women put off the operation until a terrific bleeding destroys their life. If the tumor is small and there are no serious symptoms, the case may be watched but must be watched closely.

DISEASES OF THE FALLOPIAN TUBES.

DESCRIPTION OF FALLOPIAN TUBES.—The average length of the normal tube is ten inches. The narrow end of the tube is called the isthmus and the outer end, which is trumpet shaped, is called the ampula. The canal of the tube is small. At the uterine, or womb end (ostium internum) it will barely admit a bristle. Beyond the middle of the tube the canal gradually widens to the outer opening (ostium abdominale). This is surrounded by peculiar luxuriant folds of mucous membrane called fimbriæ and these are formed by the outward bulging of the exuberant mucous membrane. These tubes extend laterally from the upper part of the body of the womb. The fimbriæ gather the ovum from the ovary and it is conveyed through the tube to the body of the womb. These tubes are subject to disease. If they are inflamed this inflammation is called "salpingitis."

INFLAMMATION OF THE FALLOPIAN TUBES—SALPINGITIS.

This is usually secondary to endometritis, the mucous membrane of the tubes becoming inflamed by its spreading from the mucous membrane of the womb. Any form may extend to the tubes but the septic and gonorrheal forms of endometritis are especially virulent and it is the rule in these that the tubes are infected. It is usually seen in the chronic form. When the tube distends with pus it is called "pyosalpinx;" when distended with a watery fluid it is called "hydrosalpinx;" and when distended with blood it is called "hæmatosalpinx."

SYMPTOMS OF CHRONIC SALPINGITIS.—Pain is the most prominent and is a continuous symptom. It may be on both sides and if such is the case it may be relieved by lying down and remaining quiet. The pain is sometimes very great. It is dull and aching or sharp and piercing and is very much worse at the menstrual period. The dysmenorrhea in this disease is usually very characteristic. It begins several days, sometimes a week, before the flow appears. It starts in the region of both ovaries and radiates thence throughout the pelvis and down the thighs and it usually lasts throughout the whole period. The pain of salpingitis persists throughout the whole course of the disease. The patient walks with the body slightly bent forward; sits down gently upon a chair and protects herself, by support with the hand, from the jolting of a carriage or car.

TREATMENT.—

In the early stages of acute salpingitis watch and be ready to meet emergencies. Observe absolute rest by lying down. Two or three times a day give vaginal douches of hot distilled or boiled water at the temperature of about 100 or 110 degrees. Give small doses of rochelle or epsom salts, $\frac{1}{2}$ to 1 dram, every 1 to 2 hours until mild movements of the bowels are pro-

duced. Continue these measures as required. Apply hot fomentations of hops over the lower part of the abdomen. In all these diseases much relief is given by the application of fomentations or cloths wrung out of hot water or hot water and hops. Hot teas may be taken freely at the same time. These produce perspiration and thus relieve the congestion and inflammation and relax the muscles of the parts. The application of fomentations should be continued for hours and they should always be kept as hot as can be borne. In the gonorrheal and septic forms there is great danger of its spreading to the peritoneum or of the formation of some form of pelvic abscess that will imperil the life of the woman and so the case must be watched carefully and continuously. If there are well marked symptoms of pelvic peritonitis or if a distinct tumor can be felt, then an operation must be performed. Fatal peritonitis sometimes results within 3 or 4 days after the onset of acute salpingitis. The chronic form should be carefully watched as an operation may be necessary.

Homeopathic Treatment.—Aconite, Belladonna and Mercurius are good for either the acute or chronic form. (For preparation and use see "Homeopathic Medicines" in Nursing Department.)

DISEASES OF THE OVARIES.

DESCRIPTION OF OVARIES.—The general shape of the ovary is oval. They are two in number. After the change of life the ovaries shrink a great deal in size and weight; sometimes from 100 down to 15 grains. The long axis of the ovary is from about $1\frac{1}{2}$ to 2 inches; its breadth about $\frac{1}{2}$ to $1\frac{1}{2}$ inches and its thickness about $\frac{1}{3}$ to $\frac{1}{2}$ inch. A healthy ovary is pinkish in color. On its surface are seen small bluish areas that mark the position of unruptured or recently ruptured ovarian follicles.

INFLAMMATION OF THE OVARIES.

Ovaritis.

CAUSES.—Inflammation of the ovaries may extend from the fallopian tubes and this is the usual cause of the acute form. Acute suppression of menstruation is also said to cause it as is acute rheumatism and the eruptive fevers.

SYMPTOMS.—There is pain in the ovarian region which increases during the menses and is most intense immediately before and at the beginning of the flow. If the flow is profuse the pain is often relieved. The symptoms may be masked by other diseases such as salpingitis and puerperal sepsis.

TREATMENT.—

This disease sometimes requires an operation but I believe a great deal can be done with medicines and especially when it is not gonorrheal in origin. The homeopathic treatment is by the use of Aconite and Belladonna at the beginning and Mercurius later. Apis Mellifica, taken for a long time, is a good remedy for chronic inflamed ovaries. (For the preparation and use of these medicines see "Homeopathic Medicines" in the Nursing Department.)

PEOPLE'S HOME REMEDIES.—

1. **Hot Cloths and Laudanum.**—For acute inflammation of the ovaries apply hot cloths to the abdomen and take 10 drops of laudanum internally every 3 or 4 hours according to the pain.

Remarks.—One of the best physicians in Ohio prescribes this treatment.





OVARIAN CYSTS.

These grow to immense size and the only cure is an operation. Tapping was once the universal method of treatment but it is not a permanent cure. The results of operations for this trouble are very good and I have no hesitation in recommending an operation in these cases. A short time ago, during my vacation in the East, I recommended an operation for a lady who had an ovarian cyst and expected to die. She had the operation performed and is today a well woman. At the time she was so filled up with the fluid that breathing was very difficult and the action of the heart was bad. This operation is quite quickly performed and generally with little danger to the patient unless there are complications or she has waited too long. Many of the inflammatory diseases of the womb and ovaries can be cured by medicine. If the cause is gonorrhea the result is not so good. I have been treating an enlarged ovary, one without dangerous symptoms, for the last eight years. In this case an operation had been advised by others. The patient is better today than eight years ago. A great many menstrual troubles can be cured or relieved by medicine. Operations should only be performed in such cases when other means have failed. However, when there is pus there is always danger and such cases require constant watching.

OUR BOYS AND GIRLS.

How to properly bring up our boys and girls is a great question. A great deal of time and thought has been given to this question not only by parents but by officials who have to do with making and enforcing the laws. The training the child receives has much to do with its permanent moral character in after life. Curfew laws are passed in some towns and cities. If parents kept their boys in at night such laws would be unnecessary. In almost any group of boys there are some who have knowledge of things that they impart to others in an improper way. Vulgar and immoral language is used and evil practices are taught to others. Many parents would be much surprised to know how much masturbation is practiced among both boys and girls. As they grow older the promiscuous mingling of the sexes gives opportunity for sexual relations and all physicians know that this often occurs even before puberty. I know of one case where a boy of but seven years of age contracted a loathsome venereal disease from a girl of seventeen. Parents should know these things. There is much harm done by concealing the truth about these matters.

In many cases our schools are at fault for here our boys and girls mingle promiscuously with children coming from all kinds of homes. This is perhaps as it should be but they should be watched over carefully or they will learn habits that are unnatural and immoral. Juvenile courts are being established and the judges state that these immoral practices are not confined to the poorer classes. Judge Lindsav, of Denver, has made a great fight against impurity and there are other judges who are now working zealously in the same direction. It is time for parents to wake up to the danger that threatens their boys and girls. Parents are not blameless. Business and society cause them to neglect their children and they are often entirely brought up by servants. No one will do for your children what you fail to do yourself. Too many children, and especially boys, grow up making light of virtue. Not only this, but masturbation is practiced to an extent almost beyond belief.

This is an unnatural practice and children should be instructed as to its awful effects upon both the mind and body. This habit is taught them by older boys and girls but they are not instructed as to its ruining effects. Parents should not only warn their children against these practices but they should instruct them as to their effects and why they are harmful. Children are sure to learn about these things but they only learn a part of the truth and it is well known that, "a little learning is a dangerous thing." Is it not better for the children to learn these things at home and in the proper way?

Children often learn to masturbate involuntarily. The habit is sometimes formed by rubbing the itching privates. Often they are not kept clean and the filth produces intense itching. See that the private parts of the children of both sexes are kept as clean as other parts of the body. Sometimes this practice is caused by the foreskin of the boy being too tight and thus irritating the parts. In such cases circumcision is necessary. In girls the hood of the clitoris often causes irritation and needs to be cut free. These operations are simple and are often necessary. Every parent should see to it that these operations are performed, if it is necessary, and it very frequently is. How often we see the little ones rubbing their private parts. Whenever a child is seen doing this the chances are that they are either unclean or need one of the above operations. Do not let the child become an involuntary masturbator through your neglect.

Parents should teach their children about themselves. Do not let them grow up in ignorance of what their re-productive organs are intended for and of the evil effects of their misuse. Before the first change comes to a girl and she begins to change in form, tell her what she may expect and what it means. Tell her about the "flow" and what the sexual relation means and how babies come. They will find it out in some way and often to their lasting disgrace. Do not let your children go astray through lack of instruction that you might have given them. Parents should treat their boys and girls in such a way that they will take them into their confidence in all things. Tell the little ones why they should not associate with immoral boys and girls and when the crisis comes that changes them into men and women tell them what it means and what care they should take of themselves. To my mind it is criminal for parents to bring up their children without some knowledge of themselves.

A CHAPTER FOR YOUNG WOMEN.

The First Crisis.—When a girl shows the "change" the mother puts longer dresses on her. Tell her why. A girl should not grow up so ignorant that when the "flow" comes she will try to stop it. I once heard of a girl who sat in the snow to stop the first menses. She was very much scared. Fortunately an older girl was at hand to tell her what it meant. At this time of life a girl needs to give special attention to her dress, amusements, habits and work. A girl should never get wet feet when she is "unwell;" she should be protected from the wet and cold. She should not go to school during this time unless she can have dry clothing and dry feet. The care taken by the girl at this time has much to do with the regularity, painlessness and efficiency of her "monthly flow." A well girl should not be made sick by the appearance of her monthlies. I think the first time it appears it would be well for her to remain very quiet and be very careful not to take

cold. It will not hurt her to lose a few days schooling. At this time of life it is well not to study too hard but to pay attention to the health. A girl that "comes around" right the first few years is almost sure to remain that way and especially if she enters this period healthy. The flow usually begins at the age of fourteen or fifteen in this climate. At this time the girl is generally very busy with her school work and is often pushed to the limit. This is a great mistake and headaches are often frequent. Our school system then pulls down the girl's health instead of building it up and many girls enter this period totally unprepared for it. From the ages of 13 to 17, girls should not study too hard. They should have plenty of outdoor life and exercise; they should be free from excitement of every kind and proper attention should be given to their health. If such attention is given the menstruation is likely to come on gradually and properly and with little pain. Of course there will be uneasiness and perhaps some headache. The menses come earlier in warm climates and in girls who lead indolent and luxuriant lives; and later in working girls. Race also makes a difference.

The menstrual flow consists of blood, mucous secretion from the womb and vagina and epithelial cells from the lining of the womb. It usually lasts from two days to a week. The first flow may be short and small in quantity; usually two to nine ounces. Again, it may be very free. In such a case quiet is necessary. Nothing need be done unless the flow is so excessive as to seriously weaken the girl, when a physician should be called. A good household remedy is stick cinnamon. Pour a pint of boiling water over a handful of stick cinnamon and drink freely. Even if a girl does not feel bad she should at this time, at least at first, avoid active exercise and amusements. No girl, at any time when she is unwell, should attend dances or indulge in undue exercise or get wet.

Parents need not worry if a weakly girl does not menstruate until she is sixteen or seventeen provided she shows no bad symptoms. After having menstruated once, a girl frequently misses one or more months. This is not unusual and it frequently takes a year or more before she becomes regular. A woman usually menstruates every twenty-eight days but the time varies in different persons. The menses sometimes occur regularly every two, three or five weeks. When they occur every two weeks the alternate flows are usually small in amount. The occurrence of, or the attempt at, menstruation every two weeks in a woman who had previously menstruated monthly is sometimes a symptom of the beginning of womb disease. Many girls menstruate every three or five weeks. For them this is normal. If a girl is unwell every three weeks it usually does not last so long and the flow is not so great. Let me repeat that a girl should take the best care of herself before and during her first menstrual periods and she will then be very likely to be free from painful menstruation unless it is a family inheritance. The following is a description which I have taken from an old but reliable writer.

"Females usually begin to menstruate about the age of fourteen and leave off at about the age of forty-five, which renders these two periods the most critical periods of their lives. About the time of the first appearance of this discharge the constitution undergoes a very considerable change; generally, indeed, for the better though sometimes for the worse. The greatest care is now necessary as the future health and happiness of the girl depend in a great measure upon her conduct at this period.

"If a girl about this period or time of life be confined to the home, kept

constantly sitting, and neither allowed to romp about nor to be employed in any active business which gives exercise to the whole body, she becomes weak, relaxed and puny. Her blood not being duly prepared, she looks pale and wan; her health, spirits and vigor decline and she sinks into the invalid state. Such is the case with numbers of these unhappy girls, who, either from over indulgence or their own narrow circumstances, are at this critical period denied the benefit of exercise and fresh air. A lazy indolent disposition proves likewise very hurtful to girls at this period. One seldom meets with complaints of menstrual trouble among the properly active and industrious part of the sex; whereas, the indolent and lazy are seldom free from them. These are in a manner eaten up by green sickness (chlorosis) and other diseases of this nature. We would therefore recommend to all who wish to escape these calamities to avoid indolence and inactivity as their greatest enemies and to be as much in the open air as possible. Unwholesome food is also very harmful. Girls often indulge in all manner of trash until their whole system is vitiated. Hence ensue indigestion, loss of appetite and a numerous train of evils. If the fluids be not duly prepared it is utterly impossible that the secretions should go on properly. Accordingly we find that such girls as lead an indolent life and eat great quantities of trash are not only subject to an obstruction of the menses, but likewise to glandular obstructions, scrofula, etc. A dull disposition is also very hurtful to girls who do not enjoy good health; while the grave, moping, melancholy creature moves the very prey of vapors and hysterics. Youth is the season for mirth and cheerfulness; let it, therefore, be indulged in; it is an absolute duty. To lay in a stock of health in time of youth is as necessary a piece of prudence as to make provision against decays of old age. While, therefore, wise nature prompts the happy youth to join in sprightly amusement, let not the severe dictates of hoary age forbid the useful impulse nor damp with serious gloom the season destined to mirth and innocent festivity.

"After a girl has arrived at that period of life when the menses usually begin, and they do not appear, but on the contrary her health and spirits begin to decline, we would advise, instead of shutting the poor girl up in the house and dosing her with medicines, to place her in a situation where she can enjoy the benefit of fresh air and agreeable, sensible company. There, let her eat wholesome food, take sufficient exercise, bathe daily with cold water, if possible, and amuse herself in the most agreeable manner; and we have little reason to fear nature, thus assisted, will not do her proper work. Indeed, she seldom fails unless the fault is on our side."

The flow in the beginning is seldom so instantaneous as to take girls unawares if they have been properly instructed. The flow is generally preceded by symptoms that foretell its approach, as a sense of heat, weight and dull pain in the loins, hardness of the breasts, headache, loss of appetite, lassitude, paleness of the countenance and sometimes a little fever. When these symptoms appear about the age at which the menstrual flow generally begins, everything should be carefully avoided which may obstruct that necessary and salutary evacuation and all means should be used to promote it if necessary. If necessary, a sitz bath can be used but I would not advise teas for the first periods. After the menses have begun the greatest care should be taken to avoid everything that may tend to obstruct them. Girls ought to be exceedingly cautious of what they eat and drink at this time. Everything that is cold or likely to disorder the stomach ought to be avoided.

Avoid all cold drinks and articles that are hard to digest. As it is impossible to mention everything that may disagree with girls at this time, it is well for every girl to be very attentive to what disagrees with her and to carefully avoid it. Much meat should not be eaten; vinegar, pickles and sour fruits should be avoided; also, strong tea and coffee should be avoided at this and indeed at all times. Cold is very harmful at this particular time. More of the female sex date their diseases from colds caught during the menstrual period than from all other causes. This ought surely to put them on their guard and to make them very circumspect in their conduct at this time. A degree of cold that will not in the least hurt them at other times, will at this time be sufficient to entirely ruin their health and constitution. Violent passions or affections of the mind, as anger, grief, fear, etc., often occasion obstructions and should therefore be avoided if possible. From whatever cause the flow is obstructed, except in a state of pregnancy, proper means should be used to restore it. For this purpose we would recommend sufficient exercise in a dry open air, wholesome diet, cheerful company and innocent, harmless amusement. If these fail recourse must be had to medicines. When the stoppage of the flow is due to a weak and relaxed state, such medicines as tend to promote digestion, brace up the system, and assist in making better blood ought to be used, but a discharge should never be forced. Under "Disorders of Menstruation" will be found much of value in the treatment of these troubles.

Now that the menstrual function has become properly established and you have become a young woman, you will need to pay a great deal of attention to other matters. I refer to your diet, the bowels, bath, exercise, sleep, dress and social functions and later to the company of young men, courtship, marriage, etc. Upon all of these subjects the mother should be freely consulted and thus needs to be well informed.

The Baths.—A cool sponge bath with quick brisk rubbing every morning is a splendid tonic. There should also be a general bath once or twice a week. The temperature of the water should not be hot but as cool as you can comfortably stand it. Put cold water on the back of your neck before you get into the bath and that will enable you to use a cooler bath without noticing it so much. Or, the water may be cooled after you get into it. Hot water weakens while the cool bath stimulates and you are not so likely to take cold as when hot water is used and the pores opened. Never go out of doors immediately after taking a tub bath. Do not bathe immediately before or after a hearty meal nor when you are over heated nor at the time of the menses.

Diet.—Eat good, hearty, simple food. Avoid pies, cakes, puddings, hot biscuits and hot breads. Neither is grease good for you. Do not eat much pork unless you are a very hard worker. The rich foods cause pimples, headaches, constipation, dyspepsia and a bad complexion. Do not drink strong tea or coffee as they are stimulating and constipating and are nerve and complexion destroyers. Eat slowly. Drink plenty of warm water between meals. Milk is good if it agrees with you. The less liquid you drink at meal times, the quicker and better your food will digest.

The Bowels.—You should have at least one passage each day and it is best to have it after breakfast. Make it a habit to go to the closet at a regular hour every day. The movement of the bowels is often a matter of habit. Do not let anything interfere with the regular evacuation of the bowels. You must be regular in this to be well and to look well. Headaches, poor health

and bad complexions frequently go with constipation. Massage your bowels frequently if they are inclined to be constipated. Different exercises and movements of your body are helpful. Drinking freely of cold water when you get up in the morning is often helpful. It should be drank from half an hour to an hour before breakfast. Proper dieting and exercise are better than medicines. If inclined to constipation, eat foods that leave a residuum, like well cooked oatmeal or other cereals. Tea and coffee are constipating. Butter and cream are a little loosening.

Exercise.—Outdoor exercise is the best. Walking is good if you will swing your whole body. Tennis is good and so is golf if not indulged in to excess. Horse back riding is good and also the taking care of a horse, cleaning, feeding him, etc. This is very good and a valuable aid in curing girls who have chlorosis. The exercise should not be too violent and should be taken regularly. Carriage and auto riding are good if you do not go so fast as to be on a strain.

Sleep.—You need plenty of sleep and as a rule should be in bed by ten o'clock. Young people need a great deal of sleep. If you do not sleep well it shows you are not well or that you are living wrong. Never take drugs to cause sleep.

Dress.—Another very harmful thing to girls and young women is their dress. They are fond of a fine shape and foolishly imagine that this can be acquired by lacing. Hence, by squeezing their body they confine the lungs, choke the stomach, and press the liver and bowels out of place, causing incurable maladies. There are many women who will go through life suffering from the dreadful effects of this wretched custom of squeezing every girl into as small a size at the waist as possible. Human invention could not possibly have devised a practice more destructive to health.

The dress should always be comfortable. The skirts should be fastened so as not to drag at the hips. A corset is all right if it is not tight but who ever saw a woman who would admit that it was ever tight. A tight corset presses upon and injures the lower part of the lungs causing difficult breathing; it compresses the heart in the chest cavity; presses the stomach, liver and bowels out of place often causing indigestion and it also causes displacement of the womb and ovaries with their attendant evils.

A good quality of flannel ought to be worn seven or eight months of the year and it would be better if it were worn throughout the year. Of course it should be of light texture in the summer and the underclothing may then be sleeveless if desired. Shoes, stockings, skirts and other clothing should never be worn while wet unless you can keep moving. When you cease moving, wet clothing should be changed for dry. Before putting on the dry clothing the whole body should be rubbed briskly with a coarse towel as a prevention against taking cold.

Going into Society.—You should not go into society too young. You are not then fully grown up and matured and you cannot stand the pace and if you do apparently stand it you will sacrifice your red cheeks and wrinkles will furrow your face. Your mother and father are your best advisers still and will continue to be for some years, and you will need their advice in seeking your companions of both sexes. Your parents have been through it all and know boys and girls, young men and young women, better than you do. They are better readers of character for they have the knowledge that comes only with experience.

Choosing a Husband.—You now need the advice of your parents more than ever before, for now the young man will be attracted by you and you will be attracted by him. This is natural. If you make a mistake it may wreck your whole life. Take your mother into your confidence. There are some rules that are safe to follow in this matter. Never have anything to do with a young man who is "sowing his wild oats," or who has sown them. This may mean more than you think. Ask your mother and she can, if necessary, find out from the family physician what it means to the young man and what it would very likely mean to you if you married such a man. Never marry a man to reform him. Leave those who need reforming severely alone. There are men who do not drink and yet who are more dangerous to you than drunkards. A man who sows his wild oats or is morally lax may be afflicted with some venereal disease that can be given to an innocent and pure wife and thus entail upon her life-long suffering. Marriage is a lottery. You may draw a prize, or your life may be made miserable. On this important matter you need the advice of your parents and you should tell them if you are attracted toward a young man so that they may find out if he is a man of good character and pure in heart and life. It is so much better to remain single than to make an unfortunate marriage.

A CHAPTER FOR MARRIED WOMEN.

Who Should Not Marry.—Not all women should marry because all women ought not to be mothers. A woman with poor physical or mental health should not marry, for such a woman as a rule will not bear healthy children. No woman with consumption should marry, neither should she marry if she has any specific disease. This applies to men as well as to women. The time will come when the state for its own protection will be compelled to make laws governing marriage. Any mental disease on either or both sides should be a sufficient cause for prohibiting marriage, for the offspring of such a marriage are likely to be endowed with a fearful heritage. Women who intend never to bear and rear children have no right to marry for this means the taking of measures to prevent conception or the getting rid of the product of conception and the latter is, in plain English, abortion.

Abortion and the Prevention of Conception.—There is a great deal of abortion being produced in all classes of society. Abortion is not only dangerous to the woman's life (and of course it destroys the life of the child) but it injures the generative organs. The womb may never get over the ill effects of abortion and many women are thus doomed to poor health for the rest of their lives. Then, if at any time afterward, children are desired, the woman is likely to miscarry and may never be able to bear a child. I say nothing of the sin. I leave that to those who ought to teach these things to the young while they are yet in the formative period of life. Abortion is frequently caused by women themselves either by the aid of medicines or mechanical means and, to the shame of my profession, it must be said that there are medical men who do it for the sake of financial gain. Whenever abortion is performed, not only the health but the life of the woman is at stake.

As to the prevention of conception, most of the means used are very injurious and especially so to the woman. During my thirty years of the practice of medicine I have seen a great deal of trouble and sorrow caused by the production of abortion and by many of the means used for the prevention of conception.

How to Conceive and Bear Healthy Children.—The one main reason for the establishment of marriage was for the bearing and rearing of children. Nature has provided for man and woman the organs for this purpose and they are wonderfully constructed. The woman who enters the marriage state with the intention of not bearing and raising children has a mistaken idea of its intent and will make both herself and her husband unhappy and miserable and when it is too late she will bitterly repent of her folly. Children make a home happier and the woman who bears them will be healthier and happier for it. If trained properly, children bring happiness to their parents and are a solace and comfort in their old age.

To the woman who marries with the intention of filling the place for which she was made, I offer a few suggestions as to how to conceive and bear healthy, happy children. If the parents are moderately healthy themselves it is true to a great extent that they can have the kind of children they wish. Very much depends upon the physical and mental condition of the parents at the time of conception. If parents are drunk at the time the child is conceived they cannot expect healthy offspring, either physically or mentally. If the parents dislike each other they will transmit something of that disposition to their offspring. If either one or both of the parents are much worried at the time of conception the child will be the sufferer. Let me instance a true case that not only cast a life-long stigma upon the child begotten at that time, but brought never-ending regret to the parents. "A father had the pleasure of seeing two of his sons grow up strong and vigorous, mentally and physically, while a third was weak, irresolute, fretful, suspicious, and half demented. He confessed to his physician the cause of this family mishap in these words. 'In the summer of 18— I failed, owing to my rogue of a partner's running off with all our money. No man, perhaps, ever felt such a misfortune more keenly than I did, and it seemed to me I should never get over the shock. I was completely unmanned and feared I should go crazy. Well, during this state of things my wife conceived and there is the result, poor S—. He inherits just the state of mind I was then in.'" "The sins of the parents are visited upon the children to the third and fourth generations."

Therefore, to beget healthy and happy children the parents must be in the best physical and mental condition. This may sound strange to some of my readers but it is true. A cross and unhealthy child is so by inheritance or training.

Pregnancy.—After you become pregnant, you owe it to yourself, your husband and especially to your unborn little one, to see that it comes into this world endowed with everything that a true, good and devoted mother can possibly give it both physically and mentally. To this end keep yourself well and happy. Eat only such foods as are easily digested and that will keep your bowels regular. Read only such books as will tend to make you happier and better. Choose the company of those whom you feel will lift you up. Gossips will not do this so do not listen to croakers who are so ready to converse with you at this time. You should get all the sleep you can so do not have company in the evening that will worry you. In short, eat only such food as agrees with you, make your bowels move every day, keep the kidneys in good working order and keep cheerful and you will get through your labor in good shape and be a proud mother. Pregnancy is a natural condition and you can make it comfortable by the care you take of yourself. Most women, fortunately, go through labor all right and by taking proper care

of yourself you will do the same and be made happy in the possession of a little likeness of yourself and husband.

God made woman in such a way that she can have babies. It is not an abnormal condition but is a natural physiological act and if, at and before the time of labor, proper care and attention are given, the woman will be healthier and far happier if she bears children. Prevention of conception in any way is injurious. Getting rid of the product of conception is not only dangerous but sinful and is injurious to the health of the woman. If a woman finds herself pregnant she should immediately determine that she will have the healthiest baby possible. With this in view she should take the best care of herself in every way. She should keep herself not only in good physical but also in good mental health. The clothing should be comfortable in every way. The food should be healthful, sufficient and nourishing. She should eliminate trash and greasy food. She should not stimulate herself with drinks, tea, coffee, etc. Her bowels should be kept regular through diet or by the aid of medicine. Her mind should be kept healthy with pleasant thoughts, agreeable company, and enjoyable reading. A mother can have a good baby if she has pleasant and healthy surroundings. Given such conditions and if she is healthy herself she can have a good and healthy baby. So she should keep herself healthy and sweet tempered and then when her baby is born it will have a goodly heritage whether it be born in a palace or in a hovel.

SIGNS AND SYMPTOMS OF PREGNANCY.

Cessation or Stopping of Menses.—If the menstrual periods stop without any other apparent cause and the woman misses one period, she may be pregnant. Especially is this the case if the woman has previously been regular. If she has been irregular, of course missing one period may not mean much. A single menstrual period may be missed by women who fear the probability of pregnancy. Usually, however, missing a period, especially with married women, is an important sign of pregnancy.

Changes in the Breasts.—The changes in a woman's breasts in the first pregnancy are quite characteristic. The woman in the early weeks complains most frequently of a soreness, tenderness and prickling in these regions. After the second month the breasts begin to increase in size as they become larger a delicate tracery of bluish veins appears just beneath the skin. The nipples soon become considerably larger and more erectile and, after the first few months, a thin yellowish fluid (colostrum) may be pressed from them by gentle massage. The coloring darkens around the nipples and becomes broader and much more deeply pigmented. This depends upon the complexion of the individual. In blondes the areolæ and nipples assume a pinkish appearance, while in brunettes they become dark brown and occasionally almost black.

The Kidneys, Bladder and Urine.—The kidneys act more frequently and the urine is considerably increased in quantity. The urine should be examined frequently by a physician during pregnancy. As the womb enlarges it rises up into the abdominal cavity and carries the bladder with it. Before this, pregnancy often causes trouble with the bladder and there is more frequent passing of the urine. Sometimes the passing of urine is painful and sometimes there is an inability to hold the urine.

Nausea and Vomiting or "Morning Sickness."—The establishment of pregnancy is often marked by sickness at the stomach and vomiting. This

occurs in a large per cent. of the cases. It is frequently called the morning sickness and, as the name implies, it usually comes in the earlier part of the day. This symptom usually appears about the end of the first month and lasts for from six to eight weeks although some patients suffer longer. In treating morning sickness be careful about the diet. Eat nourishing, easily digested foods and foods if possible that leave a residuum so that the bowels may be regulated by the diet. Constipation frequently accompanies this nausea and vomiting. The patient should eat as much fruit as possible if it does not disorder the stomach. Stay out of doors as much as possible. The bowels should always be kept open and if this cannot be done by dieting it must be done with medicines. Sick stomachs and headaches in pregnant women are frequently caused by constipated bowels. Salts may be used before breakfast; just enough to cause one or at most two passages daily. All articles of food that sicken should be avoided. Milk often disagrees and is frequently constipating. Buttermilk sometimes agrees with the patient. Keep the kidneys working freely by drinking plenty of water. Bathe frequently with cold or cool water. Gently rub the abdomen, back, hips and thighs. If other means fail to give relief, oxalate of cerium, in 5-grain doses, after meals will be found a good remedy.

People's Home Remedies for Morning Sickness.—

1. Wild Yam and Swamp Dogwood.—Make a decoction of the root of wild yam and the bark of swamp dogwood and take from 1 to 4 ounces every $\frac{1}{2}$ to 2 hours until relieved.

2. Coffee, Toast, Lemonade, Etc.—Morning sickness during pregnancy may often be avoided by taking a little coffee and toast in bed each morning before arising. Lemonade, smoked herring and sardines are good in some cases.

3. Teas.—To prevent morning sickness the patient should drink a cup of peppermint or chamomile tea about an hour before rising each morning. A tea made from red rose willow bark is also good.

People's Home Remedy for Piles in Pregnant Women.—

Cream of Tartar and Molasses.—For piles in pregnant women, prevent costiveness by taking cream of tartar in teaspoonful doses mixed with molasses or water. If the tumors are painful apply a poultice of slippery elm bark, and milk or water. At the same time apply two or three times a day an ointment made of four teaspoonfuls of spirits of turpentine and two tablespoonfuls of fresh unsalted butter. These should be well mixed.

People's Home Remedy for Sour Stomach, Heartburn or Dyspepsia of Pregnant Women.—

1. Lemon.—A slice of sugared lemon held in the mouth will often give relief.

Quickening.—This occurs about the 18th or 20th week, the woman being conscious of slight fluttering movements in her abdomen which gradually increase in intensity. These are usually due to the movements of the child (fetus) and their appearance is designated as "quickening" or the "perception of life." In rare instances it has occurred as early as the 10th week.

Cravings.—Occasionally the appetite becomes very capricious and the woman evinces an unconquerable desire for peculiar and sometimes revolting articles of food.

Enlargement of Abdomen.—There is a gradual enlargement of the womb.

This causes an enlargement of the abdomen which becomes quite noticeable at about the fourth month when the top of the womb is above the pelvic bone. It is midway to the navel at the fifth month. The abdomen increases in size up to the time of labor.

Cervix or Neck of the Womb.—Beginning with the second month of pregnancy the cervix or neck of the womb becomes considerably softened and in the first pregnancy the outer opening of the womb (*os externum*) offers to the finger a sensation or feeling similar to that obtained by pressing upon the more yielding lips of the mouth instead of the harder cartilage of the nose.

The Foetal or Baby Heart.—This can usually be heard about the 18th or 20th week. Ordinarily it beats from 120 to 140 per minute.

Later Symptoms.—Several weeks before the onset of labor, the abdomen, or belly, undergoes a marked change in shape, its lower portion becoming more pendulous (hanging down) whereas in the costal (rib) region it looks decidedly flat. The woman feels as if her waist line had become lower. The breathing is easier but walking becomes more difficult and the woman may suffer from severe cramp-like pains in the lower limbs and there may be a more frequent desire to urinate. During the last few weeks of pregnancy the vaginal secretion is increased in amount, the lips of the vagina become more swollen and open more or less widely. Not infrequently the patient may experience a few transient pains for a number of days before confinement and especially is this likely to be true if the bowels are constipated. The duration of pregnancy is usually about forty weeks.

In the Baby Department more will be found concerning pregnancy and labor.

LABOR.

Preparations for Labor.—You should have on hand the following articles.

- 5 basins,
- 1 two-quart fountain syringe,
- 15 yards unsterilized gauze,
- 6 sanitary bed pads; or,
- 2 pounds cotton batting for making same,
- 1 piece rubber sheeting, size 1 by 2 yds.,
- 1 piece rubber sheeting, size $\frac{3}{4}$ by 1 yd.,
- 4 ounces permanganate of potash,
- 8 ounces oxalic acid,
- 4 ounces boric acid,
- 1 tube green soap,
- 1 tube vaseline,
- 100 Bernay's bichloride tablets,
- 8 ounces alcohol,
- 2 drams ergotol,
- 1 nail brush,
- 2 pounds absorbent cotton,
- Squibb's chloroform.

The nurse should prepare enough bed and perineal pads. Sterilize them a week before, together with towels or diapers, 1 sheet, $\frac{1}{2}$ pound absorbent cotton and some cotton pledgets or gauze sponges. At commencement of labor she should prepare two large pitchers of boiled water, keeping one hot,

and cover them carefully with a sterile towel. The above is a good list of articles to have on hand but in some cases it may not be possible to have all these things.

Care and cleanliness upon the part of the attendants are essential. A great many cases of childbed fever are produced by carelessness. This is putting it mildly. Some attendants want to do too much and some have dirty hands. Also, some parts of the after-birth are sometimes left in the womb and produce trouble. The doctor or midwife who attends a woman during confinement assumes a serious responsibility. The troubles occurring at this time are mostly due to the carelessness of the doctor, midwife, nurse, or lastly, of the patient herself. Labor is a physiological process and with proper care a healthy woman will come through it well. Septic troubles are usually due to carelessness.

Presentation (Part to Come First).—Presentation refers to the position of the child. According to Schroeder the head comes first in 90 per cent. of the cases. So, fortunately, nature has done good work and if the woman's pelvis is normal the labor comes off regularly and safely. Comparatively, very few women die in labor.

Breech Presentation.—This does not often occur. It simply means that the breech or buttocks come first instead of the head. The labor is then longer and more dangerous to the child and especially when the head of the child is engaged by the bones of the mother. The cord is then pressed upon and the circulation of the child is stopped, so that the head must be born quickly or the child will suffocate. In breech cases I always have warm and cold water ready in two separate tubs. I quickly cut the cord and if the child does not breathe, I do not tie the cord until I have started the breathing by the following measures. First cleanse the child's mouth with your finger and remove all the mucus. Then with your hand dash the cold and hot water alternately upon the child's breast and at the same time slap it lightly upon the seat with your hand. If this does not cause breathing, alternately put the child into the tub of cold and warm water, keeping its head above water. If necessary, use artificial respiration. As soon as breathing has started tie the cord as directed elsewhere.

Sometimes, in breech cases, you find one foot down. Treat in the same way as for breech. If in the labor you find a hand and arm, and in feeling up along the arm you reach the womb and find the child's body, you are very likely to have a shoulder presentation. This does not often occur but when it does it means you must turn the child in the womb and you must get busy at once and do it. Fortunately, nature generally presents the head first and if the woman is well and the parts are large enough everything is likely to go well.

Labor Pains.—The pain usually begins in the sacral (back) region and slowly passes to the abdomen and down the thighs. The pain is different in different individuals. In some it is very severe. At the onset of labor the pains usually come on at intervals of from 15 to 30 minutes and as labor advances they become more frequent and eventually occur every 2 or 3 minutes. Their average duration is one minute.

Duration of Labor.—The time varies greatly in different cases. It usually lasts about six hours. In the first labor it is usually longer.

The First Stage of Labor.—About the end of the tenth lunar month (280 days) the woman begins to experience cramp-like pains in the lower portion

of the abdomen. These she frequently mistakes for colic. At first they come at long intervals. They are most marked in the region of the back and gradually extend towards the abdomen and down the thighs. As they become more frequent their severity increases. Then the "show" appears. The patient is quite comfortable between the pains. After a time there is a sudden gush of clear fluid from the vagina, which, in the majority of cases, indicates that the cervix or neck of the womb has become dilated and that the membranes have ruptured. Sometimes this rupture of the membranes occurs before complete dilation of the cervix and occasionally it occurs even before the onset of labor. In such cases labor proceeds more slowly. These are called "dry" labors.

The Second Stage of Labor.—For a time after this watery discharge there is a lull in the labor pains after which they recur more frequently and vigorously and compel the patient to take to her bed. The child at this time descends to the pelvis and after a time the patient experiences a marked desire to go to stool, which indicates that the head has passed into the pelvic cavity and is pressing upon the lower bowel (rectum). In a short time the pelvic floor begins to bulge with each pain and a little later the scalp of the baby may be seen at the opening. With each pain the perineum bulges more and more and the vulva becomes more and more dilated and distended by the head. The head advances a little with each pain and recedes in the intervals between them. This continues until the temple bones become engaged in the vulva (opening) when further going back is impossible and soon the head is born. In the majority of cases the perineum (flesh between the vulva and anus) is torn, but usually this is only to a slight extent.

Immediately after its birth the head falls backward so that the face touches the anus or opening of the bowel. Soon the back of the head turns toward one of the thighs (the head should be supported by your hand) and eventually the head assumes a sidewise position. The perineum is now quite tightly drawn around the neck of the infant whose face in consequence becomes marked and dark and the inexperienced attendant often has an almost uncontrollable desire to seize and extract the head by pulling upon it. This, however, is usually unnecessary for the next pain forces the upper shoulder down under the pelvic bone where it becomes fixed; while the lower or back shoulder passes over the anterior margin of the perineum after which the body of the child is rapidly expelled.

The Third Stage of Labor.—The pains cease and the patient feels more comfortable. Now the womb has become much smaller and forms a solid lump, barely reaching the navel. After a time the contractions of the womb and the pains commence once more and the woman begins to bear down. A few minutes later the body of the womb may be seen to rise up a little and a slight swelling appears immediately above the symphysis pubis. This shows that the placenta (afterbirth) has become separated from the inside of the womb and is now in the lower part of the womb or the upper part of the vagina. From this position it is expelled by the action of the abdominal muscles. In some women the entire placental period may be stopped almost instantly within a few minutes after the birth of the child, while in others the placenta may remain for hours unless forced out by proper manipulation. In this stage there is always some bleeding and not infrequently the patient has a chill during this period or immediately after its completion. This, in

itself, although it may appear somewhat alarming, has no significance as it is merely because of the nervous condition of the patient.

Delivery of the Child.—Before labor the patient should be bathed and given an injection to move the bowels. The bed should be properly prepared but the patient need not yet go to bed. Wash the vulva and inner surfaces of the thighs as everything must be clean for the attendant. The physician or midwife should be thoroughly clean (aseptic). Gloves are now often worn and they must be sterile. Too frequent examinations should be avoided. Watch the case carefully after you have found out the presentation and handle the genital parts as little as possible. If everything is all right you can do nothing at first. When the head presses on the perineum and that is hard, keep the head back until the perineum is softened and in better shape. While the head is being born keep it from pressing on the perineum as much as possible. As soon as the head is born, clean the mouth and at the same time see if the cord is around the neck of the child. If it is, it should be removed. Hold the head in your hand and simply assist when things are going right. When the child is born, if it is all right, hand it to the nurse and attend to the mother. If the child does not act as it should and the mother is all right, then you should attend to the child. If necessary, warm and cold water may be used to start breathing as directed under "Breech Presentation." Artificial respiration may have to be resorted to and should be kept up for half an hour or longer if necessary.

Dressing and Tying the Cord.—Tie the cord with a stout clean thread, tight enough to prevent bleeding. It should be tied from $1\frac{1}{2}$ to 2 inches from the body. Then put sterilized absorbent cotton around the cord and close to the body. Turn the cord up over the cotton, put a similar layer of cotton over the cord and then put on the bandage. If you do not have the sterilized cotton you can use an old but clean linen handkerchief. Cut a block three inches square and use two thicknesses. In the center cut an opening; grease the cord and then put it through the opening being certain that the cloth is close to the body of the child. Turn the cord up over the cloth and put over this two thicknesses of linen the size of the first pieces and then apply the bandage. The cord is usually tied before being cut, the exception being when the child is nearly dead and does not breathe properly. In such a case it is best to leave the cord untied so that it may bleed a little and aid in establishing respiration.

Delivery of the Afterbirth (placenta).—After the child is born see whether the womb of the mother is contracted or soft. You must look out for bleeding. If the afterbirth is not delivered and the woman flows much, then it must be delivered. Press on the top side of the womb and keep pressing gently while the placenta is being expelled. In this way you can keep hold of the womb and produce the contraction after the placenta is expelled. With the other hand you should take hold of the cord and simply assist but do not pull. When the placenta comes it should be twisted so as to twist the membranes. If the womb is large after the placenta is expelled you are very likely to have clots in the womb from the bleeding and it may be necessary for you to put your hand into the womb and release the clots. Be sure that the hand is perfectly clean. At the same time keep the other hand on the abdomen and hold the womb; and if it is not contracted the hand or finger in the womb and the hand on the womb outside will stop bleeding and soon produce contraction.

If there is but little bleeding but the womb is hard and soft by turns, gently rub the abdomen over the womb with the hand. The womb should be low down and not much larger than the fist. Never leave the patient until an hour after the placenta has been delivered and not then unless the womb has been thoroughly contracted and remains so.

Hemorrhage or Bleeding.—If the bleeding is very severe you should put one hand into the womb (being sure the hand is perfectly clean) and at the same time keep the other hand on the belly or abdomen and hold the womb. With one hand in the womb and the other outside and over it they may be pressed together and the flow of blood checked. Ergot is often given for bleeding. You can give a teaspoonful at once and half a teaspoonful again in half an hour if necessary. If no ergot is at hand, put a teaspoonful of boiled vinegar into a glass one-third full of water and give two teaspoonfuls frequently. Or, you can give two teaspoonfuls of a tea made by putting a handful of stick cinnamon into a pint of boiling water. Gauze cloths may be wrung out of vinegar water and put into the womb but this treatment needs an experienced hand. Raising the foot of the bed and keeping the head low will aid much. The fluid extract of cranesbill is also good when cloths are wet in it and put into the womb. A tea made from cranesbill will do as well as the fluid extract.

Caution.—In case the attendants discover birthmarks or any deformity of the child, they should use every precaution to prevent the mother's knowing or suspecting them as it may grieve her to the extent of causing convulsions and consequent injury.

DISEASES ATTENDING AND FOLLOWING PREGNANCY AND LABOR.

Dropsy.

A pregnant woman should attend to this immediately. It may amount to nothing or it may mean much. It may appear under the eyes or in the lower extremities or it may be general and involve any portion of the body. It may be due to pressure if the kidneys are working well. A physician should be called.

Eclampsy—(Convulsions).

This is an acute disease which may occur in pregnant women, before, during, or after confinement. Eclampsy is characterized by convulsions. The treatment should be preventive. This is very important. Frequent examination of the urine should be made during pregnancy, once a month at least for the first six months and oftener thereafter. If the woman has headaches, disturbance of vision or dropsy the doctor must be notified. Be on the lookout for albumen in the urine. See if there is a normal amount of urea in the urine. If this falls considerably below normal and a considerable amount of albumen is present, the patient is in danger and must be watched closely. Examine the urine daily. In such cases treatment must be given by a doctor. In this way many cases of eclampsy will be avoided. Rest in bed, live on a milk diet and keep the bowels open and the skin functions good. Proper treatment is often followed by better symptoms—an increased flow of urine, less albumen and an excretion of more urea. If the disease continues labor must be induced.

Child-Bed Fever—Puerperal Fever—Puerperal Infection.

CAUSES.—The most usual cause of this disease is the dirty hands of the doctor or midwife. Unclean hands, instruments, syringes and clothes are the causes. Cleanliness of person and clothing is necessary in the attendants. Disease of the attendants or poisons from diseases they carelessly carry with them also cause child-bed fever.

SYMPTOMS.—The patient feels tired and has headache and some chilliness. After everything has gone smoothly for the first three or four days there is a rising temperature, 103 degrees or higher. At the same time there is some tenderness in the lower abdomen. The womb is larger and is sensitive to pressure. The discharge is increased in quantity and is partly bloody and partly purulent in character and in the purely septic forms it is practically devoid of odor. If the temperature is very high the secretion is often diminished and occasionally disappears entirely. In reality, in the most virulent cases and especially in those due to pure streptococcus infection there is very little if any odor to be noticed in the discharge.

TREATMENT.—

The treatment should be of a preventive nature. The most scrupulous cleanliness immediately before and during labor is the means upon which we have mainly to rely in limiting the disease. This cleanliness applies not only to the doctor and midwife but also to the nurse or to any one who comes in contact with the patient. If a douche is necessary after labor it must be cleanly given. Everything that comes in contact with the mother's generative organs must be thoroughly aseptic; then it is simply impossible to poison her with germs.

Curative treatment must be given by one thoroughly aseptic and who understands the case. Curetting of the womb may be necessary though any debris may generally be removed from the womb with the fingers and this is the safer way. After the womb has been cleaned out a douche of sterile salt solution should be given.

PEOPLE'S HOME REMEDIES.—

1. **Hot Fomentations, Etc.**—Hot fomentations of tansy and hops are excellent when applied to the abdomen and should be renewed often. Stramonium leaves are also valuable when bruised and applied to the abdomen as a warm fomentation. If the fever still continues and the tongue is coated, give, in 15-grain doses every three hours, equal parts of powdered blue flag root, blood root and nitre. Also apply a mustard plaster to the feet, back of the neck and the inside of the thighs.

Physician's Remarks.—A doctor should always be called for the treatment of this disease.

Milk Leg.
(Phlegmasia Alba Dolens.)

This disease is rare, though when it does appear it is generally during the second week after labor or later.

SYMPTOMS.—The first symptom is pain along the vessels of the inner part of the thigh. In thin individuals these vessels may be felt as hard sensitive cords. At the same time swelling appears in the feet and soon extends upwards. This swelling is associated with severe pain and usually lasts for a considerable time. Months may elapse before the patient can walk with comfort.

TREATMENT.—

Relieve the painful symptoms and attend to the general health. Open the bowels with salts. Aconite and belladonna are good in small doses. Give witch hazel locally and internally. Apply hot applications.

PEOPLE'S HOME REMEDIES.—

1. **Vinegar and Salt—Tansy, Hops, Boneset, Etc.**—In case of milk leg the bowels should be thoroughly purged every two or three days and the leg frequently bathed with a mixture of vinegar, salt and water. Also, occasionally bathe the leg with a tea of bitter herbs such as tansy, hops and boneset.

2. **Mayweed, Smartweed, Etc.**—To induce sweating the patient should drink freely of a tea made of mayweed and smartweed. Should the disease become chronic, one of the best things to do is to steam the leg daily over a hot decoction of tansy, boneset and hops and apply twice daily the following liniment. The liniment is made by mixing 3 ounces of spirits of camphor, 3 ounces of sweet oil, 1½ ounces of laudanum and 1½ ounces of creosote.

Sore Nipples.

(See Baby Department.)

PEOPLE'S HOME REMEDIES.—

1. **Partridge Berry.**—Take two ounces of the fresh herb and make a strong decoction in a pint of boiling water; strain and add as much cream as there is liquid. Boil the whole down to the consistency of a soft salve and when cool anoint the nipples each time after the child has nursed.

Caked and Broken Breasts.

(See Baby Department.)

PEOPLE'S HOME REMEDIES.—

1. **Catalpa Leaves.**—Leaves of the catalpa tree wilted and applied are good for caked breasts.

2. **Ginger and Honey.**—For sore and caked breasts spread some strained honey on a cloth and sprinkle thick with ginger and lay on the breast as warm as can be borne.

3. **Brandy.**—Ring flannels out of hot brandy and apply to broken breasts.

4. **Poke Root Poultice.**—Roast some freshly dug poke root in ashes until soft and then mix with hot water and apply to caked breasts.

Physician's Remarks.—Poke root poultices thus prepared are excellent applications for troubles of this kind.

5. **Beeswax and Sweet Oil.**—When lumps or cakes remain after the inflammation has subsided apply a plaster made of beeswax and sweet oil to the breasts.

6. **Vinegar and Hop Poultices.**—For broken breasts apply warm vinegar or hop poultices.

7. **Camphor, Etc.**—Bathe the breasts three times a day the first three or four days with a liniment made of equal parts of camphor, oil of cajeput and oil of sassafras. Follow each application with an ointment made by taking ½ ounce of yellow beeswax, 1½ ounces of finely cut castile soap and 1 ounce of lard. Melt these slowly and before cool add 8 drams of Jamaica spirits in which there have been dissolved 30 grains of camphor.

This may be applied to the breasts by cutting a hole for the nipple in the center of a piece of linen the size of the breast and spreading the ointment on the cloth. It should be applied as warm as can be borne and removed and heated every five or six hours to keep it soft. Bathe with the liniment each time before applying the ointment. If matter forms apply either bread and milk or a slippery elm poultice.

Physician's Remarks.—Camphor will stop the secretion of milk but in case of a broken breast this will probably not be of importance.

Abortion.

Among medical men it is customary to speak of all cases occurring before the 28th week as abortions. Generally it is called a miscarriage. Some call it an abortion only when it occurs before the 16th week and it is then called a miscarriage if it occurs between the 16th and 28th weeks and after that time, if occurring before the natural time, it is called premature labor. Abortion, miscarriage or premature labor is an expulsion of the foetus or child before its natural time.

CAUSES.—It is difficult to tell the percentage of accidental cases. Besides being a criminal offense and destroying the life of the child the purposely causing of abortion is very dangerous to the woman's life and health. Syphilis, displacements of the womb, diseases of the womb, diseases of the heart and kidneys, sugar diabetes, and fright and grief sometimes cause an abortion. During the first four months diseases and displacements of the womb cause many of the cases while after that time syphilis and Bright's disease play a very important part.

TREATMENT.—

Threatened miscarriage or abortion calls for the services of a doctor. The woman should immediately take to her bed at the first sign of flowing or pain. For the pain the patient should be put to bed and given a hypodermic of $\frac{1}{4}$ grain of morphine at once. This should be followed by 1 grain rectal suppositories of extract of opium which should be repeated every 4 to 6 hours. The Indian women used herbs for threatened abortion. Black Haw was one of the remedies and is good for threatened miscarriage and as a preventive in cases of habitual miscarriage. It should be taken one or two weeks previous to the time of the former miscarriage and should be continued to the end of pregnancy. The dose of the tea is half an ounce several times a day and the dose of the tincture is a teaspoonful 4 or 5 times a day. This is also very good for after-pains.

TREATMENT.—

Preventive Treatment.—It is best to prevent abortion if possible. Doctor the diseases which cause it. A woman who has once had this misfortune is very likely to have it again, and perhaps more liable to it at the same month of pregnancy that it first occurred. Special care should be taken to prevent this. The woman should not be subjected to fright, anger or grief and should not lift heavy articles and should not ride on the cars, train or automobile or after a fractious horse. She should also keep away from the water. She should lead a very quiet life for a month before and a month after the time she first miscarried. Miscarriage is very bad in its effects on the health of a woman. It is likely to leave a long train of ills behind it. There may be flowing or a foul discharge for some time. If this is the case it may be that part of the afterbirth has been left in the

womb and there may be inflammation. Leucorrhœa, due to disease or a torn cervix, may be one of the after effects of abortion.

A CHAPTER FOR WOMEN OF FORTY-FIVE.

The "change of life" or "menopause" is the final stopping or "cessation" of menstruation and occurs between the fortieth and fiftieth years. There are cases that occur earlier and some that occur later. The flow may gradually diminish in amount until it disappears entirely or it may stop abruptly or there may occur one or more intervals of one, two or three months or more duration and be followed by one or more normal flows. Profuse bleeding at this time and slight bleeding occurring more often than monthly are, unfortunately, thought by most women to be of little account and as a part of the normal phenomena of the change through which they are passing. The same may be said of the apparent reappearance of menstruation or of irregular bleedings occurring after the menopause has been established and menstruation has been absent for many months. Such appearances are not normal. They should always excite the alarm of the woman for they demand immediate attention. As a rule the flooding is caused by some diseased condition of the womb, as inflammation, polypi, fibroid tumors, or cancer. The mild lesions may disappear with the progressive dwindling of the womb and the flow may cease. Many women undoubtedly recover without treatment and are thus confirmed in their belief that such irregular bleedings are a normal part of the change of life and the unfortunate women with cancers are thus encouraged to delay seeking advice and treatment until it is too late.

The normal changes that occur in the genital organs at the menopause are wasting or atrophic in character. If the woman is in good health and has no disease of the womb, tubes or ovaries the menopause may become established without any marked general disturbance. In many cases, however, very annoying general symptoms appear and last for one or two years before the woman becomes adapted to the altered conditions. There may be headaches, flashes of heat, nervous depression, derangement of the digestive apparatus and other functional disturbances. The woman often becomes very fat at this period. The nervous derangement may be so severe as to result in insanity. The flashes consist of a feeling of heat over a part or the whole of the body, followed by sweating and the sensation of cold or a slight chill. They may occur frequently during the day and sometimes several times during an hour. They usually do not occur as often during the night.

The treatment of the menopause should be directed toward the maintenance of the general health of the body and mind. The diet should be carefully regulated. Too much rich food should be forbidden. The bowels should be kept open and regular. The woman should have plenty of fresh air and the proper amount of exercise. The first dilution of *Gelsemium* in small doses is good for the nervous disturbances. Put 10 drops in a glass half full of water and take two teaspoonfuls every 2 to 4 hours. The sixth trituration of *Sepia* is also good at this time. Take one tablet every 3 hours. The above are Homeopathic medicines. Quiet and soothing medicines like bromide of potash may be used to produce rest and sleep. You can use the elixir bromide of potash, taking from 2 to 4 tablespoonfuls a day. Give a tonic like *nux vomica* in from 1 to 5-drop doses 4 times a day. Or, gentian compound may be taken in teaspoonful doses 4 times a day.

Mental depression and nervousness demand a change of locality and surroundings. Above all they demand cheerful, pleasant and sensible company and a good, honest, practical physician. Constant talk, advice and encouragement do much good at this time. A practical physician can carry many women, who would otherwise become insane, safely through this period by proper encouragement and treatment.

A woman at this time should sleep well and have a good healthy appetite and eat proper food. If necessary the bowels should be kept open with mild laxatives such as salts, etc. Baths should be taken frequently. Be out of doors as much as possible. Have good cheerful company. Many women during the "change of life" have very little trouble; others need to be under the care of the family doctor. Go to him when you feel bad and he can frequently aid you without giving any medicine. Others have passed through this time safely and so will you if you do not worry. Keep control of yourself and hope for the best and that will aid you wonderfully. Make light of your worries at this time and they will decrease. If you have any real disease go to your doctor and tell him plainly all about it. Remember that you will get better even though slowly.

ALL ABOUT THE MOTHER AND HER BABY.

NURSING AND FEEDING.

Why Should a Mother Nurse Her Baby?

Because it is 'the law of nature and nature has provided for it. The mother's milk is the only ideal health food. Babies that are nursed resist disease better and are healthier in every respect. Nursing will also be an aid to the mother; it will reduce the womb to normal size, keep it so and render her less liable to pelvic congestion and diseases of the womb.

Should a Nursing Mother Drink Tea or Coffee?

Not as a rule; if she does it should be in moderation. Tea and coffee are constipating and also very likely to make the mother nervous. The mother should remember that anything that injures her will injure her baby. Cross, colicky, restless, sleepless children generally have mothers whose digestion is poor, whose bowels do not act properly and who are nervous and restless themselves.

Are there Any Diseases that Prohibit the Mother's Nursing?

Yes; cancer, inflammatory rheumatism, scarlet fever, puerperal (child-bed) fever, typhoid fever. Also any disease which causes a serious infection of the blood prohibits nursing.

Does Nursing Necessarily Drain a Mother's System?

Not if she is reasonably well and her surroundings are favorable.

Should a Nursing Mother Eat Fruit and Vegetables?

She may eat freely of such articles as do not disturb her digestion. Even this rule has its exceptions. Some infants have very feeble digestive powers and a healthy mother must be very careful with such babies. Mothers whose babies are cross and colicky should avoid everything that is raw and sour and large quantities of cold drinks. This includes sour fruits, raw or cooked; also pickles, tomatoes and cabbage. Mothers will also find that free indulgence in animal foods, as meat, milk and eggs, is likely to make an infant colicky.

How Soon After "Labor" Should the Baby be Put to the Breast?

It depends upon the condition of the mother and the child. If the mother has had a hard labor she should have a good rest, especially if she is exhausted. She should nurse it as soon as possible for nursing aids in contracting and keeping the womb contracted, lessens danger of bleeding from the womb and promotes the secretion of milk. If the baby sleeps well and only awakens when the diaper is changed and then falls asleep again it is not necessary for it to nurse. If, however, the baby cries, is uneasy and refuses to be quieted, we may, six hours after delivery, put it to the breast. If anything is needed before six hours, give the baby a little weak, warm, sugar water.

What Secretion First Appears in the Breast and What is Its Use?

Colostrum. It tends to regulate the bowels and puts the stomach in order for the digestion of the mother's milk.

How Soon Do the Breasts Secrete Good Milk?

Usually on the third day good milk fills the breasts.

If there is then no Milk Secreted What Should be Done?

If the baby is fretful and cross give it some cream; one part cream and five parts warm water.

If There is Little or no Milk After Waiting a Few Days What Should Be Done?

If there is some milk the baby should nurse and if the food agrees with the baby supply the deficiency by artificial feeding until the mother has enough milk and of proper quality. If the child is well nursed it will sleep well and its stools, one or two a day, will be of light yellow color and odorless.

What Should You Feed if a Mother Cannot Nurse a New-Born Babe?

Four to five teaspoonfuls of weak sugar water every six to eight hours, with a teaspoonful of very thick cream; same on third day every one and one-half to two hours unless mother is then able to nurse.

Supposing that This Kind of Feeding is Insufficient, What Must be Done?

A "wet nurse" must be procured, or baby must be hand fed.

Are there Reasons for the Baby's Being Unable to Nurse, Even When the Mother has Plenty of Milk?

Yes; poorly developed nipples, nipples so retracted that the baby cannot nurse. Such nipples must be "drawn upon" until they stand out properly. The treatment should begin during the last four months of pregnancy.

Suppose the Nipples are so Sore that Nursing is Very Painful?

After each nursing wash the nipples clean with alcohol, one part and water, four parts. Dry them thoroughly, then apply solution of tincture benzoin compound with camel's-hair pencil. You need not wash this off before next nursing as it will not hurt the child. Or, use one teaspoonful of boric acid to a cup of warm water. Bathe nipples very gently after each nursing. After they have been washed with boric acid solution apply the following ointment.

Bismuth Nipple Ointment.—Subgallate of bismuth, 1 dram (teaspoonful); benzoated lard, 1 ounce. Mix and apply to sore nipples after each nursing. This is good and not injurious to the baby. Also good for baby's sore mouth. The following is very good—glycerine or tannin, 1 fluid ounce; boiled water, 1½ ounces. This is to be painted on nipples after using the boric acid solution mentioned above. Sore nipples should not be used so frequently—partly feed the infant. Do not let the infant nurse too long.

How May Sore Nipples Be Prevented?

Use nipple protectors or shield, and during the last few months of pregnancy rub and massage the skin thoroughly over the nipples. When they are not in a wet condition, apply mother's own saliva or cow's milk so that the nipples are moist and then massage and rub them thoroughly.

What Can You do for Nipples that Crack or Discharge Pus?

For cracked nipples use tincture benzoin compound as for sore nipples, or you may use boric acid solution or oxide of zinc ointment. (Should be washed off before nursing.) You may also use glass or hard rubber shield for a few days until the nipple gets well. This is very good. If pus is discharged from both nipples the baby must be weaned.

What Can You do to Prevent a "Broken" Breast?

Keep the breasts thoroughly emptied, with a breast pump if necessary, and keep them well protected at all times from pressure and irritation from the clothing. If the breasts are so full they keep the clothing constantly

wet, use the breast pump. Such mothers should drink but little fluid and eat mainly solid foods, unless the child is injured by the solid foods. This will be shown by the condition of its stools—loose and of bad color and odor.

If the Mother has not Enough Milk Should She Wean the Baby or Partly Nurse It?

Partly nurse it and feed the baby. The mother's milk assists the stomach to digest the other foods, but if the mother's milk then produces colic, and green mucus and slimy stools follow nursing, the mother's milk is not of good quality and the nursing must be discontinued. Green stools, when accompanied by mucus and slime, are usually indicative of the unsuitable quality of food (milk) which causes colic and crossness.

How Can You Increase the Supply of Milk?

By regular habits, proper food, and proper amount of exercise and rest. Milk, if taken, should not be used too freely for it has a tendency to produce indigestion and biliousness in the mother, and the baby will then have colic with mucous and yellowish green stools. Weak tea or thin gruels, well boiled (with only enough cream or milk to make them palatable), are good when it is necessary to take drinks in large quantities. A gruel should be made so as to be only a drink, not a meal; for if it is made richer than a drink it may cause indigestion and thus reduce the amount of milk secreted. Beer and extracts of malt are also used for this purpose but are not equal to the gruels in furnishing a nourishing quality of milk. Plenty of outdoor exercise should be taken, but refrain from overwork, worry and excitement. Good cocoa is also beneficial.

Should a Nursing Mother Use Any Alcoholic Liquors?

This depends largely upon her previous habits. She should avoid spices, highly seasoned foods and everything which heats the blood or tends to disturb the stomach, liver, bowels and kidneys. Her diet should be plain, simple and strengthening.

What Things in the Habits or Diet of a Mother are Likely to Cause Colic or Indigestion in the Baby?

Shock, fright, fatigue, worry, grief, passion and sudden anger are very common causes; also the food previously mentioned.

Is there any Benefit Derived from Chocolate or Cocoa?

Yes. It is a great milk maker; it increases the quantity and improves the quality.

How Can You Tell When a Baby is Well Nourished?

When the weight constantly increases; when the baby has a good color and sleeps well after each nursing; when awake, is not fretful and peevish and when it has one or two yellowish stools daily.

What Symptoms Show that a Baby is Poorly Nourished?

Such a baby is cross, fretful, peevish, irritable and restless; has irregular sleep; sleep is broken up in short naps; nurses often and long or nurses breast a short time then relinquishes it and cries; has colic and its stools contain undigested particles; its weight either remains stationary or decreases.

Does a Healthy Baby Ever Vomit After Nursing?

Yes. It is generally due to overfeeding or to milk that is too rich. If the milk vomited is sweet and is not curdled and the child remains well, the vomiting is harmless.

How Long at a Time Should a Mother Nurse Her Baby?

Usually from five to fifteen minutes. If a healthy baby nurses longer it is generally due to a deficiency in the milk secretion.

How Often is it Necessary for the Baby to Nurse the First Few Days After Birth?

Four or five times daily.

How Often Should The Baby Nurse During the Succeeding Months?

Every hour and a half to two hours during the first month and twice at night—nine p.m. and two a.m.; every two hours during the second and third months; then the time can be extended to three and one-half hours.

What Should Be Done if Baby Wants to Nurse Oftener?

Give it distilled or boiled water as warm as the milk.

When Should You Stop Night Feeding?

If a baby is healthy and growing and sleeps well, you can begin at from the sixth to the ninth month.

What Can You Do for a Hard, Inflamed or Caked Breast?

Relieve it with a breast pump. This may prevent caking, but if caking does occur the breasts should be rubbed and massaged three times daily for five or ten minutes after the hands have been thoroughly washed and anointed with some sterilized oil. The breast is grasped in the palms of both hands, one above and one beneath, and the breast then subjected to firm pressure with a worm-like motion. A suspensory bandage folded bias relieves the pain. Take a soft towel or large handkerchief, fold it bias, pass it underneath the arm and tie it behind the neck.

Applications.—(See Women's Department.)

1. Cloths wrung dry out of hot water and applied hot on the breast is a good treatment in some cases.

2. Cloths saturated with a tea made from poke root is a good remedy. Put this on the sore breast continuously.

3. A poultice made from poke root is excellent, or a poultice of fluid extract of poke root. The fluid extract can be bought very cheaply. Use half poke root and half water. Wring cloths out of it and apply warm.

4. Fluid extract of poke root may be used internally. Put one teaspoonful of the fluid extract into a glass one-half full of water. Give two teaspoonfuls every one to three hours regularly. It will not hurt the baby in this dose.

Homeopathic Treatment.—1. Belladonna, 2nd dilution. Put ten drops into half a glass of water and give one to two teaspoonfuls every one to three hours. This is very good when the breast is very red and throbs and beats.

2. Bryonia, 2nd dilution. Same dose and given in same way as Belladonna. This is good, especially after Belladonna, when there is much severe aching all over and it hurts to move.

Allopathic Treatment.—Keep the bowels open with epsom salts, 1 tablespoonful in half a glass of water taken in the morning. Ointment of oxide of zinc is very good for sore and cracked nipples. It must be washed off before nursing.

Should You Give the Nipples any Attention if they are not Sore?

They should be kept clean and dry. Immediately after nursing, dry the nipples with a soft cloth and rub olive oil over them. Continue for a week or two.

Should a Baby Nurse from a Breast that is "Broken" or Contains Pus?

No; for it may contract a very dangerous diarrhea.

If a Mother can only Partly Nurse the Baby, What Other Food May be Used?

Fresh cow's milk or some one of the many good baby foods. The method of preparing cow's milk is described later.

When Should You Begin to Wean the Baby?

Weaning should be begun gradually when baby is eight months old, unless weather conditions (summer) or circumstances, such as teething, make it advisable to postpone or hasten it.

Do You Advise Sudden or Gradual Weaning?

Gradual, unless conditions and circumstances demand sudden weaning.

What Conditions or Circumstances Demand Sudden Weaning?

1. When the mother is in poor health and needs constant and continuous medical treatment and this treatment seriously impairs the baby's digestion, then it may be necessary to wean the baby suddenly.

2. When both breasts contain pus (matter).

3. When the stools (contents discharged from the bowels) are always green, foul and strong, and are not changed by nursing in four or five days.

What Diseases Make Sudden Weaning Necessary?

Puerperal fever, scarlet fever, typhoid fever, pneumonia, pyemia, septicemia.

Should a Mother Nurse Her Baby if Her "Monthlies" Return?

Yes, unless the nursing disagrees with her baby. This is shown by the stomach and bowels of the child becoming disordered.

Can You Give Crackers, Bread, Butter, Etc., to Weaned Babies?

Crackers very thoroughly baked, almost charred, and stale bread may be given to weaned babies but bread should be stale and with no butter, as butter is very likely to upset the stomach. None of these should be given to babies under nine months to a year old.

What Causes Sore Mouth in the Nursing Mother?

A too restricted diet, lack of exercise and fresh air.

What Should be Done for Such a Condition?

If the baby is not nourished it must be weaned. The mother should drink freely of acid drinks, such as lemonade, lime juice, etc., and should eat freely of vegetables and seasonable fruits. Baked apples, prunes and other dried and preserved fruits may be eaten if fresh fruit cannot be procured. Wash the mouth frequently with boric acid, 10 grains dissolved in 1 ounce of water, or tincture of hydrastis (golden seal) diluted one-half with water.

Internally—Homeopathic Treatment—Mercurius Sol., 3rd trituration. Give one tablet every 3 hours. Keep bowels open if necessary with salts.

What is the Best Food for the Baby if the Mother Cannot Nurse It?

Cow's milk modified to resemble human milk as much as possible.

How Does Cow's Milk Differ from Human Milk?

Cow's milk contains almost three times as much curd and about one-half as much sugar. The curd is not easily digested.

What Ingredients Compose the Human Milk?

Out of 100 parts there are 87½ parts of water and 12½ parts of food. The 12½ parts of food are made up of fat, 4 parts; sugar, 7 parts and proteids casein and albumin, 1½ parts.

What do You Call the Fat and Proteids in Milk?

The fat is the cream. The proteids are the curd which is very similar to albumen (or white of egg). They make muscle.

What is the Top Milk?

The upper third or half of milk that has stood six or eight hours, which then contains three times as much cream as ordinary milk.

How Can You Obtain the Top Milk?

Take it off with a spoon or siphon.

How is it Usually Treated or Diluted to Make Babies' Milk?

Take 1 part of top milk and add 2 parts of warm water; then add 1 heaping teaspoonful of milk sugar to 4 ounces of this mixture or diluted food. If cane sugar be used, one teaspoonful is enough for six ounces of the mixture.

Following is a very good combination: 2 tablespoonfuls granulated sugar, $\frac{1}{2}$ cup boiling water, 1 tablespoonful lime water, 1 cup ($\frac{1}{2}$ pint) cream, $1\frac{1}{4}$ cup of milk. Steam 20 minutes. This recipe comes from Dr. Hinsdale, of the University of Michigan, and is very good. Increase or decrease the amount of sugar, cream and milk according to the way they agree with the child.

Should You Boil the Milk for Babies in the Summer?

No. It makes it hard to digest. Curd and albumin (white of an egg) are identical. You would not boil the white of an egg and give it to the baby.

When is Milk Said to be Pasteurized?

When it is heated to a temperature of 154° to 170° (Fahrenheit) and retained at that point from twenty to thirty minutes.

How do You Pasteurize Milk?

Place milk in a bottle (fruit jar will do), cover the top with absorbent cotton and set it in a tin pail of cold water deep enough to surround the milk. This water should be boiled for 30 minutes. A plate or dish must be put underneath the bottle to prevent breaking.

Should the Milk Always be Pasteurized?

Always in the summer. Better at all times in the cities. Cream does not rise from pasteurized milk so the cream should be taken off before the milk is pasteurized. The cream should also be pasteurized.

Is Partially Boiled Milk Harder to Digest?

Very little and this is more than counter-balanced by killing of the germs.

How Can You Sterilize Milk?

By bringing it to the boiling point (212 degrees Fahr.) and keeping it there for 20 to 30 minutes.

Which is Preferable, Pasteurized or Sterilized Milk?

Pasteurized is easier to digest on account of sterilized milk being boiled, and it is pleasanter to the taste, but it will not keep as long as sterilized milk. It keeps for only one or two days. Sterilized milk keeps longer.

What is a Simple Way of Sterilizing Milk?

Same way as the one described for pasteurizing; keep up the process only long enough to make the milk boil, which is shown by the bubbles coming to the surface.

When and Why Should Lime Water be Used in Milk?

The use of lime water neutralizes the excessive acidity (overcomes the sourness) of the milk both before and after it is taken into the stomach. If the baby's stomach is sour, lime water corrects this. Add one to three tea-

spoonfuls of lime water to each feeding. Usually, give 1 ounce or part of lime water to twenty ounces or parts of food.

How Do You Make Lime Water?

By mixing building lime and boiled water together. It does not matter about the amount of lime for only so much will dissolve in the water and it cannot become too strong. Water can be poured off after standing three or four days and more water added to the lime. Lime water is very cheap and it can be procured fresh at any drug store as needed. The following is another way to prepare lime water.

Take one heaping teaspoonful of slaked lime and one quart of boiled or distilled water; place in a corked bottle and shake thoroughly two or three times during the first hour. Allow the lime to settle and after 24 hours the upper, clear fluid may be carefully poured or siphoned off for use.

Is there Anything We can Use in Place of Lime Water for the Same Trouble?

Yes; common baking soda. Two to four grains of this may be added to each bottle of food or 20 grains to 20 ounces of food. Twenty grains is equal to $\frac{1}{3}$ of a small teaspoonful.

When is the Soda and Lime to be Added to the Milk?

Soda may be added at any time to the milk. Lime water must only be added after the milk has been heated.

Peptonized Milk—What is It?

Milk which has been partially or completely digested, so far as the casein is concerned, by the addition of a digestive ferment. You can buy these digestive tablets at the drug store. Dr. Douglas of Detroit gives the following good formula:

Pancreatin	1 drachm.
Salicylate of soda	5 grains.
Bicarbonate of soda	80 grains.
Simple syrup	4 ounces.

Ten to twelve drops of this solution will peptonize an ounce of milk and enough of it should be put into each bottle before warming the food to peptonize or predigest the amount of milk which each meal contains. More of the mixture may be used if this amount does not predigest the milk. When a pancreatin mixture as above given smells very strong and disagreeable it shows there is some decomposition in it and some other pancreatin should be used.

Is Peptonized Milk a Good Milk to Use?

In some cases of acute indigestion when the stomach is very weak and there is no pepsin secreted.

Would You Advise the Use of Only One Cow's Milk?

Yes; if you are sure the cow is healthy; otherwise, it is better to use milk from the whole herd.

Do You Prefer Milk from Either a Jersey or Alderney Cow?

The milk from these cows is very rich in cream but deficient in casein. The Holstein and Ayrshire and common grade cows are usually vigorous, healthy and strong and secrete a milk better suited to infant feeding.

Should Milk Be Diluted During Whole Babyhood?

Yes, but reduce the amount of water after the fourth month, since the food should be made stronger after the baby is three or four months old.

How Should Cow's Milk Be Diluted at First?

The upper third or half of milk that has stood for six or eight hours should

be taken off. Add to this twice as much boiled water and then add one heaping teaspoonful of good milk sugar (Sugar of Milk is the same thing) to every four ounces of the above food; or, if cane sugar is used, add one teaspoonful to every six ounces of food. If this is too rich you can add more water.

How Can I Tell if the Milk I Buy is of Good Quality?

The specific gravity of milk is 1029. Its reaction is slightly acid. To determine the specific gravity, get a lactometer from a druggist, fill a beaker so that it will float the lactometer and read the figures on the scale. If it is above or below 1029 it is watered or reinforced by some foreign element. For acidity (sourness), secure from your druggist, for a few cents, some blue litmus paper. Put a small piece in the milk and if there is too much acidity it will change to red.

How Can I Determine If the Cream is of the Right Amount?

Take a long thin bottle and paste a narrow strip of paper on the outside. Mark the paper into sixteen equal parts before you paste it on the bottle. The lower edge of the paper should come just to the bottom of the bottle, while the milk should come to the top of the paper. Set the bottle filled with milk aside for twelve to twenty-four hours. The layer of cream rises to the top and should be one-sixteenth of the whole amount. If there is less than one-sixteenth of cream the milk is either very poor or has been skimmed.

What is Condensed Milk?

Condensed Milk is milk from which the greater part of the water has been evaporated. It is valuable when you cannot obtain pure cow's milk and when you have little ice to keep cow's milk fresh.

What Kind of Bottles Should be Used for Giving Artificial Foods?

A straight cylindrical bottle holding eight ounces, on which are figures dividing it into ounces and half ounces. You should have two or more bottles for emergencies. See that the marking is correct so as to be sure the baby receives the proper amount of food. All bottles should be rinsed immediately after being used. Black rubber nipples should be procured as all rubber is naturally of that color. The nipples should be scrubbed and cleaned thoroughly and kept in a soda or boric acid water till used again. Rinse them thoroughly before using again. This care prevents much trouble in the way of sickness.

Summary of Feeding Rules for Children.—

1. Avoid night feeding after the first six months. It causes wakeful habits and a cross, irritable and unsuccessful child.

2. Hot weather always requires pasteurized or sterilized foods, smaller meals, and lime water in or with the food. A reduced milk diet and lime water are essential in summer.

Is Vomiting in Nursing Infants a Bad Sign?

The child that vomits much and is healthy merely casts out the superabundance of mother's milk swallowed. This is very different from vomiting accompanied with coldness of the skin and cold sweating and sick stomach.

What are the Causes of Vomiting?

Unhealthy food and diseases—scarlet fever and meningitis.

How Does Unhealthy Food Affect a Baby and What May be Done For It?

Babies suffering in this way are cross, pale and restless, very often having green, slimy and foul stools.

Treatment.—Regulate diet when that is at fault. Temporary relief may be obtained by a dose of castor oil or by giving the following to move the bowels:

Laxative Alkaline Mixture.—(For child one year old.)

Bicarbonate of soda	40 grains.
Aromatic syrup of rhubarb	4 fluid drams.
Syrup of senna	5 fluid drams.
Syrup of orange	1 fluid dram.

Give one teaspoonful two or three times a day as needed for sour stomach with constipation or foul smelling stools. Or, to strengthen stomach digestion give the following digestive assistant:

Essence of pepsin	1 ounce.
Essence of pancreatin	1 ounce.

Give 10 to 20 drops after each meal for a child one year old. Increase the dose gradually if necessary.

Do Green Stools Always Indicate Unsuitable Food?

No: Many infants have imperfectly developed digestive glands when born and cannot properly digest even good human milk.

What Food Usually Causes Green Stools in the Healthy Infant?

Usually it is caused by too much of proteids (curd) in the mother's milk or too much skimmed milk in the diet of the hand-fed infant.

What Foods Would You Give when Weaning is Demanded at Six or Seven Days Old?

A very light cream from bottled milk 16 to 24 hours old, diluted with four times as much boiled water and sweetened with 1 ounce of good milk sugar or $\frac{1}{2}$ ounce of granulated sugar to every 15 ounces of the mixture. One ounce of lime water may be added to every 7 ounces of this and 1 to 2 tablespoonfuls of this mixture fed to the infant every two hours or when it shows hunger. If the whole mixture is sterilized or pasteurized it may be fed without adding the lime water.

Can the Infant Continue to Thrive on this Strength of Food?

There must be the proper increase of one or more of the constituents of food (fat, sugar and proteids). If there is too much sugar it will cause gas, colic, loose splashy stools and a scalding redness in the bowel around the rectum, extending all around the hips, due to the fermentation of the sugar. Seven per cent. of sugar is about all an infant can stand. The usual strength of milk sugar required for infants over one month is 1 ounce to every 20 ounces of food mixture. Increase 1 to 18 if necessary; or, if it causes irritation, change to cane or grape sugar; or, the milk sugar may be reduced to 1 ounce to 25 or 30 ounces of food. Granulated sugar does not ferment as quickly in hot weather as milk sugar and about half the amount of granulated sugar is needed. Milk sugar, however, should be preferred during the first 6 months if it agrees with the baby.

Fat should form from 1 to 4 per cent. of the food. That is from 1 ounce to 3 or 4 ounces daily. The new born infant may consume two to four teaspoonfuls of cream (fat) daily. The infant two months old may consume twenty-five teaspoonfuls daily, thus leaving about eighteen to twenty teaspoonfuls of cream to be added to the infant's diet any time during the first eight weeks, or an average of $2\frac{1}{2}$ teaspoonfuls added each week during the first two months. It may not be able to digest more than this amount any

month afterward. If too much fat is given the appetite of the baby lessens; it vomits an hour or more after meals; it cries and has gas in the bowels; sleep is disturbed; or, the bowels are loose with foul-smelling, greasy or rancid stools.

How Much Can the Proteids (they are found in skimmed milk and some also in cream) Be Increased?

Infants of one month may consume $\frac{1}{2}$ ounce daily and the large healthy infant of 10 months about 25 ounces daily. The 24 (we take 24 for comparison) ounces represent 192 teaspoonfuls (1 ounce equals 8 teaspoonfuls) and thus shows an increase of only about $4\frac{2}{3}$ teaspoonfuls weekly or $\frac{2}{3}$ teaspoonful daily of skimmed milk. This amount is for a large healthy infant. If too much skimmed milk (proteids) is given the infant becomes cross and colicky, sleeps poorly, wakens very often and cries out with pain. The stools become green, show much mucus and often curds; in some cases part of the stools will be formed, the rest soft and splashy. In other cases stools will be formed and well digested but carry a few curds also.

What Does Skimmed Milk Contain?

Four and one-half per cent. of sugar and $\frac{1}{4}\%$ of fat in addition to the proteids. Hence by too great increase of skimmed milk you get too much sugar and fat.

Rules For Artificial Feeding Up to Twelve Months. (From Douglas.)

Age.	Number of Feedings in 24 hours.	Interval between Feedings, Hours.	Night Feedings, 10 p. m. to 7 a. m.	Quantity for each Feeding, Ounces.	Quantity for 24 hours, Ounces.
Third to seventh day.....	10	2	2	1 to $1\frac{1}{2}$	10 to 15
Second to third week.....	10	2	2	$1\frac{1}{2}$ to 3	15 to 30
Fourth to sixth week.....	9	2	1	$2\frac{1}{2}$ to $3\frac{1}{2}$	22 to 32
Sixth week to third month	8	$2\frac{1}{2}$	1	3 to $4\frac{1}{2}$	24 to 36
Third to sixth month.....	7	3	1	4 to $5\frac{1}{2}$	28 to 38
Sixth to ninth month.....	6	3	0	$5\frac{1}{2}$ to 7	33 to 42
Ninth to twelfth month..	5	$3\frac{1}{2}$	0	$7\frac{1}{2}$ to 9	37 to 45

Feeding Rules For Children From 12 to 15 Months Old. (This is from Holt's "Infant Feeding"—pages 10-11-12.)

First Meal.—A bottle containing 10 ounces of food composed of milk, 7 ounces, and 3 ounces of wheat, oatmeal or barley gruel. If milk is not rich enough you can use 8 teaspoonfuls of cream and 6 ounces of milk. A pinch of salt and half a teaspoonful of granulated sugar may be added. This meal should be given about 6:30 a. m.

Second Meal.—10 a. m. Same as the first.

Third Meal.—At 2 p. m. Beef juice 1 to 2 ounces three times a week, an egg coddled or soft boiled two times a week, and a bottle containing $\frac{1}{2}$ the amount given at the first meal. A small piece of crisp toast may be given with the broth.

Fourth and Fifth Meals.—Same as the first and given at 6 and 10 p. m.

Fruits at this period are the following: fruit juices, of which orange juice is the best; next to this the juice of fresh ripe peaches, apricots or strawberries. All these should be strained carefully through muslin to make sure that the child gets none of the pulp or seeds, either of which may cause a serious disturbance. Of the orange juice or peach juice, 1 to 4 tablespoonfuls

may be allowed at one time; of the others, half that quantity. The fruit juice is best given one hour before the second feeding.

Feeding Rules for Children from 15 to 20 months.

First Meal.—10 to 12 ounces of plain cow's milk, warmed, taken from a cup.

Second Meal.—2 tablespoonfuls of oatmeal, hominy, wheaten grits or some other cereal (of course this means take your choice of one of these only) thoroughly cooked from 3 to 5 hours and strained, with 1 to 2 ounces of thin cream, $\frac{1}{2}$ teaspoonful of sugar and a little salt; plain milk 6 to 8 ounces.

Third Meal.—Boiled rice (cooked 3 hours) usually with beef juice, stale bread or zweibach. If the under teeth are through, raw scraped meat, such as beefsteak or mutton chop, at first only one teaspoonful at a time; prune pulp (not the skin), 1 to 2 tablespoonfuls; plain milk, 4 to 6 ounces. Make up what is needed from the third meal given for child 12 to 15 months old.

Fourth Meal.—Farina and milk, 10 to 12 ounces in all, alternating with arrowroot or granum and milk, or stale bread and milk.

Fifth Meal.—10 to 12 ounces of plain milk from a bottle.

Fruit juices may be given in larger quantities now.

Feeding Rules for Children From 20 to 24 Months.

First Meal.—Plain milk, 10 to 12 ounces.

Second Meal.—Same cereals as during the preceding four months, except they need no longer be strained, only very thoroughly cooked. Plain milk, 6 to 8 ounces; piece of stale bread.

Third Meal.—Raw meat pulp (steak, chop or roast beef), from 1 teaspoonful to 1 tablespoonful, well salted, and four ounces of chicken or mutton broth; on alternate days from 2 to 4 ounces of beef juice, or a soft egg mixed with bread crumbs or with 1 tablespoonful of rice jelly well cooked; stale bread without butter; and fruit. Only water to drink.

Fourth Meal.—Farina, granum or barley and milk, 10 to 12 ounces in all.

Fifth Meal.—10 to 12 ounces of plain milk.

What Fruits During This Period?

Only fruit juices if digestion is feeble. Strong children may have in addition prune pulp, baked apple and apple sauce. Prune pulp is prepared by stewing the dried prunes without sugar until they are very soft and removing all the skin by putting the fruit through a strainer. One to two tablespoonfuls may be given at a time; baked apple, plain; a little sugar with apple sauce.

Feeding Rules for the Third Year.

How Many Meals During the Third Year?

Four; all night meals omitted.

Proper Diet for an Average Child During Third Year?

Juice of an orange $\frac{3}{4}$ hour before breakfast.

First Meal.—Two tablespoonfuls of a well cooked cereal with cream, a little sugar and salt; stale dried bread and butter; glass of warm milk; soft egg three times a week.

Second Meal.—Glass of warm milk or a cup of chicken or mutton broth with a slice of stale or dried bread; a piece of unsweetened zweibach or a Huntley Palmer breakfast biscuit.

Third Meal.—Broth (when not given at second meal); meat, steak, chop, roast beef, roast lamb, or white meat of chicken, scraped or very finely cut; potatoes (baked or mashed) or rice, or macaroni stewed very soft with milk; asparagus, or fresh peas, or string beans, or spinach, or stewed celery, all thoroughly cooked and mashed; bread and butter; junket or plain custard twice a week; on other days prunes, baked apple or apple sauce.

Fourth Meal.—Ten to fourteen ounces of warm milk, with bread, farina, arrowroot, barley, corn starch or granum and milk, or milk toast. Hours—6:30—10—2 and 6.

Feeding Rules for the Third to the Seventh Year.

ARTICLES OF FOOD.—

Milk.—This should be the basis of the diet; most children require about one quart a day. This usually needs no modification but if the curd is somewhat difficult of digestion, as shown by changed character of stools and colic, it may be prepared by adding to 6 ounces of milk 1 ounce of cream and 3 ounces of water. The milk to be given warm.

Cream.—This is of great value, especially when there is a tendency to constipation. From 2 to 4 ounces may be given daily, but it is essential that it be given fresh. It may be used upon cereals, upon potatoes, in broths, and mixed with milk. In many cases it is better to stop feeding milk and give only cream.

Cream should be omitted if its use is followed by coating of the tongue, foul breath, looseness of the bowels and other signs of indigestion.

Eggs.—They should be fresh, soft boiled, poached or coddled, but never fried. Some children tire readily of eggs even though the manner of cooking is varied. Others will take an egg twice a day for an indefinite period with relish and benefit.

Meats.—Some form of meat which has been properly cooked should be given once a day. The best forms are beefsteak, mutton chop, and roast beef or lamb; next to these the white meat of chicken or fresh fish, which should be boiled or broiled; fish may be used once a week instead of meat; beef and mutton should be given rare. Do not give meat and eggs at the same meal.

Vegetables.—Potatoes may be given once a day, preferably baked, with the addition of cream or beef juice, rather than butter. Of green vegetables, the best are asparagus tops, spinach, stewed celery, small carrots, string beans, fresh peas and squash; young beets may be used, if thoroughly cooked. One of these vegetables may be given daily, always well cooked and mashed.

Cereals.—Nearly all of these may be used: oatmeal, wheaten grits, hominy, farina and arrowroot. Thorough cooking is necessary.

If grains are used the cereals must be cooked at least three hours, after having been previously soaked for several hours. If the prepared oats or wheat are used they should be cooked at least $1\frac{1}{2}$ hours; the prepared flours at least 20 minutes. They should always be well salted and given with milk or cream, but with little or no sugar.

Broths and Soups.—The meat soups or broths are preferable to the vegetable broths. Nearly all varieties may be given. Plain broths are very nutritious and when thickened with arrowroot or corn starch with cream or milk added they are very palatable, and at the same time are a valuable addition to the diet. Beef juice may be used as directed for the second year.

Bread and Crackers.—In some forms these may be given with nearly

every meal, with very little butter until the third year. Cream is usually a better form of fat. All varieties of bread may be allowed when stale; also, dried bread, zweibach, and oatmeal, graham or gluten crackers, or Huntley Palmer breakfast biscuits.

Desserts.—The only ones that should be allowed up to the sixth year are junket, plain custard, rice pudding without raisins and, not oftener than once a week, ice cream. Of the last three the quantity should be very moderate.

Fruits.—They are an important part of a child's diet and should be given in some form every day. Oranges, baked apples and stewed prunes are most to be depended upon. Raw apples in most cases should not be given. Peaches, pears and grapes (seeds removed) may be given when thoroughly ripe and fresh but only in moderate quantity.

Special care should be exercised in the use of fruits in very hot weather and in cities where they may not always be fresh.

Berries and cherries are best deferred until children are five or six years old, and even then should be given sparingly.

Beware of unripe or over-ripe bananas.

Potatoes.—May be used during the second year, but not during the first year. Never feed them to young infants during the summer season as they cause indigestion and diarrhea. They must be boiled or mashed and may be dressed with cream, gravy (not much) or beef juice and a little salt.

FORBIDDEN ARTICLES.—

Meats.—Pork, ham, sausage, dried and corn beef, salt fish, liver, bacon, kidney, meat dressings, duck and goose and also meat stews, are all difficult to digest.

Bread and Cakes.—Avoid hot bread, rolls and biscuits, griddle cakes and much sweet cakes, particularly those with fruit or frosting.

Vegetables.—Avoid potatoes in all forms during hot weather, and fried or scalloped at all seasons, cabbage, onions, cucumbers, tomatoes, beets, radishes, green corn, baked beans and fried egg plant.

Desserts.—Avoid candies, dried, canned and preserved fruits, nuts, pies, tarts, pastry, and much ice cream.

Drinks.—Do not give wine, beer, cider, tea or coffee.

Fruits.—Avoid bananas, stale fruits and those out of season, all hard kinds, and those that are very sour. Avoid grapes unless the seeds and skins are removed.

MAKING PREPARATION FOR THE BABY.

Baby's Wardrobe.—This may be as extensive as the mother wishes and can afford.

The belly band should be of soft, thin, white shaker flannel, five inches wide and sufficiently long to pass two or three times around the body. It is secured with strings, not with pins.

The binder is discarded usually about the seventh month when the infant begins trying to stand. There is much difference of opinion about this. Some say the flannel band can be discarded when the baby is four months of age, others earlier. To prevent rupture, a bandage is used to hold navel and dressing in place until healing and separation have taken place.

Clothing.—This should consist of a chemise of wool next to the skin, and over this should be a loose garment, also of wool or flannel, reaching from the

shoulders to below the feet and sufficiently long, say 25 inches, to allow it to be folded upward. Garments should not be tight across the chest.

The chemise, which should be of gauze weight, is worn both winter and summer. Wool irritates some children. For these, place a fine linen chemise next to the skin and over this the gauze wool garment. No sleeves or opening in front for chemise. Woolen socks to reach to the knees.

Diapers.—Lot of them; 4 dozen of birdseye cotton. Needs to be just twice its width in length, say 18 inches wide and one yard in length.

For The First Half Year the Following is Recommended in Clothing.

1. Diapers of birdseye cotton—a goodly number.
2. An undershirt, of the softest flannel, without sleeves and opening in front, as many as you may need, say three.
3. A fine flannel princess dress about 27 inches long, opening in front, and with high neck and long sleeves.
4. Muslin slips of similar style, many as you need, say six.
5. Woolen socks to reach to the knees.

Or the Following:

Six dresses.

Six slips; a little more simple than the dresses, to be worn altogether the first month or six weeks.

Six white petticoats (Butterick pattern the best).

Four flannel shirts.

Four day skirts.

Six muslin night dresses.

Four flannel wrappers for night wear in cool or cold weather.

Four or six pinning blankets.

Four dozen diapers.

A flannel apron for baby's bath, to be worn by the nurse or whoever bathes the baby.

Four soft flannel bands, unhemmed, 5 by 25 inches, and socks. Some mothers prefer the little crocheted booties.

BATHING.

At What Age May a Child be Given a Full Tub Bath?

Usually when two weeks old. It should not be given before the cord comes off.

How and When Should the Bath be Given?

It is generally considered best to give the bath in the morning and not sooner than one hour after feeding. The room should be warm; if possible there should be an open fire. The head and face should first be washed and dried; then the body should be soaped and the infant placed in the tub with the body well supported by the hand of the nurse. Bath should be given quickly, body dried (not rubbed) rapidly with a soft towel.

At What Temperature Should the Bath be Given?

For the first few weeks at 100 degrees; later, during early infancy, at 98 degrees; after six months at 95 degrees. During the second year from 85 to 90 degrees. (Fahrenheit.)

What Do You Regard as the Best Soap for an Infant?

There are many good ones. Do not use irritating soaps. (Ivory soap is good.)

Is It Necessary to Use a Baby Powder After a Bath, and If So, What is Best?

Not necessary. Remove all moisture and if anything is needed, ordinary talcum powder or pulverized or sifted oatmeal will do.

Would You Continue the Daily Bath with a Sick Baby?

No; only bathe enough to keep it clean. Baths in some kinds of sickness are injurious.

Do You Give any Special Attention to the Scalp?

It should be thoroughly washed and dried. In infancy the sebaceous or oil glands are very active and the head must be kept clean or a skin disease will develop. (Scald-head, milk crust, etc.) Dry the hair with a soft towel and brush with a fine hair brush. Do not use a comb. No preparation of any kind need be used on the head.

If there is any Chafing Must You Modify the Bath?

Instead of soap, one tablespoonful of powdered borax may be added to the bath if necessary.

Apply the following if necessary:

Boric acid	1 dram or 1 teaspoonful.
Glycerine	1 dram or 1 teaspoonful.
Balsam Peru	1 dram or 1 teaspoonful.
Vaseline, white	1 ounce.

Mix, make into an ointment and apply to sore parts.

CARE OF THE BABY.**On Which Side Should a Baby Lie?**

On the right side mostly. The liver is a very large and heavy organ and will press upon the stomach and make the baby uncomfortable if you place it on its left side.

What are the Normal Respirations of an Infant?

Immediately after birth, 44 per minute; first to sixth month, 24 to 36 per minute; second to fifth year, 20 to 32 per minute; sixth to tenth year, 20 to 28 per minute.

What is the Normal Pulse Rate?

At birth, 130 to 135 per minute.

First year falls to 110.

Second years falls to 100.

Fifth to 8th year falls to 98.

At puberty (15 years), 72.

What is the Normal Temperature at Birth?

99½ to 100 degrees Fahrenheit.

Where Should Temperature Be Taken?

In the rectum, thermometer half buried for three minutes. If taken in the armpit leave five minutes.

What is Included in the "Period of Infancy?"

This depends upon the authority; some say from birth to the end of the first year; others say until all the first teeth come.

What is Included in the "Period of Childhood?"

From completion of first teething to ten, twelve or fifteen years, differing according to authors.

How Many Hours a Day Should a Baby Sleep?

It should sleep most of the time.

Do You Approve of Rocking or Walking With the Baby to Make It Sleep?

Keep it as quiet as possible. Take it in your arms if it is restless and sing it to sleep. Keep it from excitement. Do not let anyone awaken it out of a good natural sleep simply to see it. Causes a bad habit. Remember the line from Pope—"Just as the twig is bent the tree is inclined."

Suppose the Baby Will not Sleep?

Regular habits in feeding both in mother and child and good healthy stomach and bowels in both will aid and correct anything that is not very much wrong.

Are there any Causes Other than Sickness that Will Make a Baby Restless and Sleepless?

Teething causes nervousness and it is very likely to have indigestion, poor nutrition and brain excitement, which will cause sleeplessness. Hunger, due to insufficient and poor quality of food, irregularity in feeding or nursing, irregular habits and improper diet in mother may cause sleeplessness. Remember sleeplessness is frequently due to worms.

Should Either Quieting Medicines or Soothing Syrup Ever be Used?

When you have done everything and the baby does not sleep, some quieting medicine must be given for the child will be more injured by the crying and loss of sleep than by the quieting medicine.

Do not use soothing syrups for so many of them have morphine or opium in them and they are dangerous for a child. Paregoric will do, 1 to 3 to 5 drops for pain and sleeplessness, given every hour, if needed, until the child is quiet.

If the child takes too much of a quieting medicine it must be kept awake and be given strong coffee and an enema (injection) to move the bowels freely.

Mothers must remember that even a few drops of paregoric have caused death, and paregoric must be handled carefully.

Do not forget the soothing influence of soft lullabies. How many children have been lulled to sleep by the old nursery rhyme—"Hush-a-bye-Baby!"

The best plan is to begin at first and give the baby its meals at regular hours and only nurse or feed twice at night, say at 9 and 1 to 2 a. m. You will form a habit and the baby will soon be satisfied and generally sleep well.

When a child is wakeful and restless, lay it first on its right side; then, in an hour, or whenever it appears uneasy, turn it upon its left side. Sometimes lying on one side too long makes a child restless and a change of position rests it.

What are Some of the General Signs of Sickness in a Baby?

Unusual paleness or a general flushed face, dull looking eyes, no desire to eat or to play, listlessness, disturbed sleep, uncommon wakefulness, sudden starting or jumping while asleep with apparent fright, unusual drowsiness, vomiting accompanied by paleness or paleness alternating with a flush of redness more or less deep, hands and feet hotter, unusual and persistent coldness of the feet, unaccustomed fretfulness, frequent or prolonged fits of crying or a marked change in the character of the cry, frequent or constant wrinkling of the brow, twitching of the muscles of the face, rejection of food, unusual movements of the head and limbs, crying or moaning whenever the body is moved and a material rise of temperature all indicate illness in the baby.

What Should be Done if a Child Shows the First Symptoms of a Serious Illness?

Put the child to bed. If it is an infant, the food should be diluted one-half the usual strength. If an older child, only fluid food should be given. If the child seems feverish take the temperature. If the bowels are constipated give a teaspoonful of castor oil. Better exclude other children from the room, especially if it has been exposed to a contagious disease, or if there are contagious diseases in the neighborhood.

The diapers of sick children, as well as of healthy ones, should be changed as soon as wet and washed soon. The child must have clean clothes or it will become sore and chafed.

Does a Baby Sweat About the Head?

Not generally.

What Does Sweating About the Head Indicate?

It indicates weakness and is one of the first signs of rickets.

What Cry Indicates Sickness?

Too long or too frequent crying, a moaning or fretful cry and oftentimes a whine and feeble, worrying cry indicate sickness. Temper cry is boisterous.

What Cry Indicates Pain?

A pain cry is a strong, sharp, sudden cry and is accompanied by contraction of the features and drawing up of the limbs.

What Does Frequent Jerking and Twitching of the Muscles Mean?

Irritation somewhere and is common in indigestion, diarrhea and in brain troubles; it also frequently indicates convulsions.

What Does it Mean When it Hurts a Child to Be Handled?

Rheumatism or acute rickets. With pleurisy the child cries when the chest is pressed upon. It may also mean inflammation of some organ in the abdomen (belly).

What Indicates Chronic Illness?

Loss of weight accompanied by other disturbances.

Sleeping With Eyes Half Open Means What?

Simple colic or pain anywhere causing unsound sleep. It is also a common symptom in all serious acute and chronic diseases.

How Much Does the Stomach of a New-Born Infant Hold?

Six to seven teaspoonfuls.

What Causes a Child to Cry When It Passes Urine (water)?

Inflammation of the urethra or a too acid urine. Animal foods form an excess of urea in the blood which the kidneys cannot eliminate. Then uric acid crystals form, causing pain in passing urine. Meat diet should be lessened and farinaceous (starchy) foods substituted, not entirely, but mostly. Fortunately, such a condition rarely occurs in a baby under two years of age but is most often found in older children who have been living on some form of meat juice or beef tea.

What Causes Bleeding From the Navel?

Cord improperly tied or blood vessels were very large. Remove clothing and dressing and re-tie carefully near the body with strong linen thread.

How Can I Tell if the Baby is Tongue-Tied?

Bridle beneath the tongue is too short, or is attached so near the tip of the tongue as to interfere with its motion in sucking. If baby can protrude

the tongue beyond the lips or if it can draw on the nipple enough to nurse, you need have no fear of a tongue tie.

What Can be Done if the Baby is Tongue-Tied?

The bridle may be nicked with a pair of blunt scissors. There is an artery here so a doctor must do it.

"DONT'S" FOR THE BABY.

Don't let the baby have milk in the bottle to suck all night. Its presence in its mouth keeps the baby half awake and it will not rest well and will awaken often.

Don't give it an empty bottle to suck at any time for it will not only keep it wakeful, but the baby will suck air and get wind colic.

Don't take the baby out evenings and break up its regular habit. It will make the baby restless and wakeful.

Don't keep it up when callers are present evenings and disarrange its habit of going to sleep at its regular time.

Don't give it a "comfort" at night. Do not commence the habit as it may tend to keep the baby from sleeping soundly. If it awakens often at night give it warm water instead of milk.

Don't rub or massage the baby at night as it will tend to cause more blood to circulate in the brain. Massage or rub the feet gently if you wish, also the spinal column gently.

CHILDREN'S DISEASES.

SORE EYES.

What Causes Sore Eyes in a New-Born Babe?

Error in management after birth. The secretions from mothers sometimes cause it. Too much light. Careless use of towels. Dust. It is called "ophthalmia neonatorum" and is very dangerous to the sight. Over 70% of all babies going blind during the first year become blind from this disease, and for this reason a doctor should be called at once. It is frequently caused by gonorrhea in the mother.

What Should Be Done for Sore Eyes?

Cleanse the eyes with a soft piece of linen, hold the baby on your lap with head bent backward and light toward the diseased eye. Gently separate the lids and clean them with a solution of boric acid, $\frac{1}{4}$ of an even teaspoonful to a pint of warm water. Use a soft cloth or a little absorbent cotton. If there is much inflammation and pus, you must get a doctor. In the meantime, wash the pus (matter) away with a solution of boric acid, 10 grains to 8 teaspoonfuls of water. If the lids stick together a little vaseline from a tube should be rubbed upon them at night. If the trouble is slight this will cure it. Also exclude light from the room—live in a dark room.

Be careful of the discharge. Do not get it into your eyes or you will contract the disease. Never use the same towels or cloths for yourself.
Further Treatment.—

Aconite—third dilution. Put 15 drops into $\frac{1}{2}$ cup of water and give two teaspoonfuls every 1 to 3 hours.

Mercurius Sol. 3d trituration—1 tablet every three hours when there is much matter.

(Local) Silver nitrate, 2 to 5 grains; water, 1 ounce. Turn lids down and apply gently with a camel's-hair pencil after eyes are cleaned.

To dilate pupil, use atropine, 1 grain and water, 1 ounce. Drop a few drops into eye to make pupil dilate so there will be no adhesion. Must be carefully used or you will set up atropine poisoning.

EARACHE.

How May I Know When the Baby has Earache and What Can be Done for it?

Very common in babies. Symptoms—child cries suddenly and violently and continues persistently to cry in loud, sharp scream-cries. Puts hand to the affected member and cries when the ear is touched. Turns the head with the sore ear down. When very young it is restless, moans constantly and refuses to be comforted; cries almost every moment. The inconsolable infant should be at once suspected of having earache.

Treatment.—Irrigate ear with a solution of boric acid. Use 20 grains boric acid to 1 ounce of water. Twenty grains is $\frac{1}{3}$ teaspoonful and 1 ounce is equal to 8 teaspoonfuls. Use as hot as can be borne.

Apply dry heat. First cover the ear with cotton then with a bandage; bind on a small hot water bag or a bag filled with hot salt or bran.

When the pain cannot be controlled by heat externally, give internally from one-fourth to one drop of laudanum (1 drop for a one-year-old baby). You can put it in water in order to get the right proportion. For instance, put 1 drop into 4 teaspoonfuls of water and give one teaspoonful; that makes $\frac{1}{4}$ of a drop at a dose. I would not give laudanum more than twice with an interval of $\frac{1}{2}$ hour after first dose. Laudanum dropped on cotton and placed in the ear is good. The application of steamed hops is also good. Paregoric may be given every hour for 3 or 4 doses, but some children cannot take it at all. Apply, if necessary, a hot onion poultice.

Earache often terminates in a discharge which generally stops after a week or two. If it does not cease, pour into the ear and empty out after 15 minutes the following:

Sulphate of zinc	20 grains.
Carbolic acid	10 drops.
Tincture iodine	$\frac{1}{2}$ dram ($\frac{1}{2}$ teaspoonful).
Glycerine	2 ounces.

Mix thoroughly, and fill ear each day while child lies down and after 15 minutes let it run out (always syringing out the ear first with warm water). Keep this lotion warm. Thin it with water if it is too thick.

Homeopathic Remedies.—

Pulsatilla, 3rd trituration.—1 tablet every $\frac{1}{2}$ hour to hour until better; for pain, neuralgic in character, intermittent, no fever.

Mercurius, 3d trituration.—1 tablet every hour when suppuration (pus) is impending or has already begun.

Belladonna, 3rd dilution.—Put 15 drops into a glass $\frac{1}{2}$ full of water and give two teaspoonfuls every $\frac{1}{2}$ to 3 hours for beating, throbbing arteries, very red face, fever.

Aconite, 2nd dilution.—Prepare same way and give same dose for earache caused by cold.

Mullein oil dropped into ear or cotton saturated and put into ear. Keep bowels open.

HEADACHE.

What are the Symptoms of Headache and What Can be Done for it?

A hot, restless, wakeful baby tells by its wrinkled brow, rolling head, avoidance of light, moaning, and general heavy appearance that it has headache. Many of these cases are not recognized and the fever and pain pass on to brain trouble.

Causes.—Fever, cold, hot sun, indigestion, constipation, weakness, fatigue, eye strain and diseases of heart and kidneys.

Treatment.—

Bathe the head gently and freely with cool water and soon the little one is quiet and lets you continue bathing. Remove cause. Begin general treatment by moving the bowels.

Take sulphate of magnesium (epsom salts), 2 ounces and cream of tartar, 2 ounces. Mix, and for a child one year old give $\frac{1}{2}$ teaspoonful in water every three hours till the bowels move freely; younger babies in proportion.

COLIC.

What Causes Colic in Babies?

The baby is improperly fed, for colic is always due to imperfect digestion. In nursing babies it is generally due to irregularity in the health or habits of the mother, or to change in her diet. Too frequent nursing is often the cause.

Is Colic Ever Dangerous?

Yes; the crying may cause a rupture.

How Does a Baby With the Colic Act?

The baby cries violently until it is blue in the face, its belly or abdomen is swollen, hard, and tense. The child doubles up, clinches its fists and then straightens them out with violent jerks. These symptoms last a variable time, then cease, often after a passage of wind from the mouth and bowels.

How Can Attacks of Colic Be Prevented?

Keep the feet and legs warm, in fact the whole body; regulate the diet properly and the habits of the mother. These are the best preventives.

If Nursing Gives Relief, Should the Baby Nurse During an Attack of Colic?

No; for nursing only gives temporary relief and furnishes more fuel for the colic, since in most cases it is due to fermented food. Give the colicky baby some hot water if it is thirsty.

What is the Proper Treatment for Colic?

The nursing mother must carefully watch her own diet. Regular and longer intervals for nursing, and less quantity. Give more water.

In bottle fed infants the proteids are at fault. Reduce them, that is, the skimmed milk. If necessary, reduce the cream and sugar and starch. Colic is usually accompanied by green or mucous stools when too much proteids are given.

General Treatment.—First, see that the feet are warm. Apply flannels to the abdomen (belly) or let the baby lie upon its stomach across a hot water bag.

If colic continues inject into the bowels $\frac{1}{2}$ teacupful of warm water containing 10 drops of turpentine, and at the same time gently rub the belly so as to start the gas (wind). If gas is in the stomach, give $\frac{1}{2}$ soda mint tablet in 1 tablespoonful of hot water.

If stomach is filled with food, give $\frac{1}{5}$ to 1 teaspoonful of syrup of ipecac every 15 minutes until the child vomits, or one tablespoonful of goose grease or any drippings kept in the kitchen for cooking, or $\frac{1}{2}$ teaspoonful of alum in a wine-glassful of water or syrup. Tickle the throat with a feather or finger or spoon handle. If vomiting does not quickly follow any of these remedies, try $\frac{1}{2}$ teaspoonful of mustard in $\frac{1}{2}$ glass of warm water; this succeeds often when all others fail to cause vomiting. Give two teaspoonfuls of common salt in a wine-glassful of water, or a cathartic to get rid of irritating material.

Here is a remedy from Dr. Douglas of Detroit, who is a great specialist in children's diseases.—

Bicarbonate of soda	40 grains.
Aromatic syrup of rhubarb	4 fluid drams.
Syrup of senna	5 fluid drams.
Syrup of orange	1 fluid dram.

Give one teaspoonful two or three times a day as needed, for sour, gassy stomach with constipation or foul smelling stools.

Home Remedies.—

Soda Mint Solution.—

One-half teaspoonful of baking soda.

One-half teaspoonful of aromatic spirits of ammonia.

For a one year old child give one teaspoonful spearmint or peppermint water in a cup of hot water, and repeat if necessary.

Frequently, relief can quickly be obtained by giving some drink such as peppermint, anise seed tea, catnip tea, etc. Gin and whiskey are also good; mix them well with soda mint solution above, if you have it.

The above home teas are very good. Make them as you would any tea. The longer they are steeped the stronger they become.

Chamomilla, 3rd trituration; one tablet every $\frac{1}{2}$ hour. Give this when the belly is terribly distended because of no relief from gas. Chamomilla tea is also good. Teas may be used freely.

Make peppermint, anise seed and catnip teas the same way you make the infusion from store teas. You can buy these drugs cheap at drug stores with directions on each package. They are much more harmless than store tea. Usually take two ounces of the medicine to a pint of boiling water and give one to two ounces of this solution every $\frac{1}{2}$ to 1 to 3 hours, as needed. This dose is for an adult; give only one-twelfth of this amount to a baby.

TEETHING.

When and in What Manner Does Teething Come in a Healthy Infant?

There are 20 teeth in the first set, The two central lower incisors are usually cut first, from the fifth to ninth month. The four upper central teeth next, from the eighth to twelfth month. The other two lower central teeth and the four front double teeth come from the twelfth to the eighteenth month. Then follow the four canine teeth, the two upper ones being known as the eye teeth and the two lower as the stomach teeth. They generally come between the twenty-fourth and the thirtieth months.

At one year a child usually has six teeth; at one and one-half years, usually twelve teeth; at two and one-half years, usually twenty teeth.

Permanent teeth, which number thirty-two, usually appear in the following order and time: first molars at 6 years; incisors, 7 to 8 years; bicus-

pids, 9 to 11 years; canines, 11 to 14 years; second molars, 12 to 15 years; third molars (wisdom teeth) 18 to 25 years.

Does Teething Necessarily Cause Convulsions and Other Sickness in Babies?

Not necessarily. A healthy baby, unless it has a peculiar constitution seldom has convulsions from this cause alone. A nervous, irritable baby that is poorly nourished and whose system is already deranged by previous ill health is very likely to have trouble when teething.

Children very robust and apparently healthy sometimes have convulsions when teething. When they do it is often due to the fact that the gums are sore, hard and tough, which holds them down so hard on the tooth that the nerve is irritated and convulsions follow.

Do Convulsions During Teething Call for Lancing?

Such a condition calls for proper lancing, especially when accompanied by the child's being fretful, restless, or sleepless. The child may start and jump when sleeping. It is sometimes necessary to lance several times. Lancing is not very painful and the relief is soon seen by the change in the child.

What are the Early Signs of Teething?

Several weeks before, there is usually an increased flow of saliva (drooling). The child chews upon everything it can get its hands on.

Do You Approve of Giving the Baby Anything to Bite Upon?

A soft rubber ring may be used; not the nipple, for the baby will then get the colic from sucking wind. Nothing hard should be used.

What Causes the Mother to Dread the Second Summer During Teething?

It is then that the first molars and also the canines usually come. These two groups of teeth may cause trouble if the teething comes when it is very warm, damp and muggy, especially in improperly fed and poorly nourished children. Bad weather and improper feeding cause more convulsions and diarrhea (looseness of the bowels) than teething.

What is the Cause of Early Decay in Infant's Teeth?

This is generally due to improper food and a neglect to keep the mouth clean. Sour stomach will also cause it. Take a piece of absorbent cotton, dip it into boiled water and gently clean the baby's mouth after it has nursed from the bottle. The mouth of a breast infant usually needs no attention. Usually before the teeth come the mouth needs no attention.

Keep the bottle and nipple thoroughly clean. They should be boiled once a day for 15 to 20 minutes and cleaned thoroughly after every nursing with hot water, etc.

What are the Disorders Resulting From Teething?

There is sometimes considerable constitutional disturbance, more or less pain and discomfort, fever, vomiting, diarrhea or convulsions resulting from teething.

Can You Aid Teething With Medicine?

Calcarea phos (Homeopathic), 3rd trituration.—1 tablet four times a day and continued for weeks. In cases where mothers find that their children do not teethe readily, this, given during the last four months of pregnancy, will help.

Is it Well to Check the Loose Bowels Coming During Teething?

Never directly with binding remedies for nature is trying to carry off poisonous materials in the bowels. It is generally best to give a mild laxative to get rid of the contents of the bowels in severe cases and this frequently stops the trouble.

Is Change of Air Beneficial to Teething Children?

Yes, go to a dry cooler climate, but you must dress the child thoroughly to protect it from the climatic change. Loose bowels frequently come from the child's getting chilled.

SORE MOUTH.**Is Sore Mouth, Stomatitis, Thrush or Canker Common in Children and What are the Causes?**

This is very common, especially in hand fed babies. It may be due to dirty nipples, but is usually due to improper feeding and too much food, causing indigestion.

How Soon Does Sore Mouth Appear?

Any time after the first week.

What are the Symptoms of Sore Mouth?

Nursing is painful; the child will drop the nipple and cry; drools and has foul breath. The mouth is red and on examination you will find one or more sores inside of the lips or cheeks and on the tongue or under it. These may be like a pin head or as large as a pea and are usually white at first and ash gray later. There may be from one to fifty of them and they may form ulcers with red edges, sometimes covering the entire inside of the mouth.

What is the Treatment for Sore Mouth?

Treatment.—Reduce the food and drink, and have regular times for giving them. For foul mouth use stomach powders.—

Calomel	1 grain.
Baking soda	10 grains.

Mix, and divide into 10 powders and give one every one to two hours until the bowels move and carry off the fermented food. The stools must return to the healthy, yellow, inodorous, mustard consistency before the baby is well.

Local Treatment.—Sore Mouth Powder.—

Powdered borax	1 dram (teaspoonful).
Powdered sugar	4 drams (4 teaspoonfuls).

Mix; put a pinch on the tongue every two to three hours. This can be used without hurting and is very good.

This is very good.—Wash gently after every feeding with a solution of borax and water; 1 part borax to 4 parts of water.

Borax 1 part, sage tea 3 parts, honey 3 parts. Make a salve and apply gently.

Or, Golden Seal (fluid extract of hydrastis) 1 part to 5 parts of water. Apply locally with absorbent cotton wrapped upon a wooden toothpick. This swab may be used for all solutions. Also, you may use juice of ripe tomatoes.

Homeopathic Remedy.—For Sore Mouth.—

It is generally Mercurius Sol., 3rd trituration—one tablet every 1 to 3 hours, as needed. This is very good.

DIARRHEA.

In moderate cases in a baby the milk should be reduced and in hand fed, especially, the amount of cream. Feed less and not so often. In severe attacks with vomiting and frequent foul stools, stop all food at least 12 hours

and all milk for a longer time and move the bowels freely with a cathartic, say castor oil. Broth (thin) and barley water may be given. Rest is very essential; cooling drinks may be given. The following is good.

Subnitrate of bismuth	2 drams.
Chalk mixture	2 fluid ounces.
Paregoric	2 fluid ounces.

Mix and give one-half to one teaspoonful every two to four hours as needed for loose bowels in a child six months to two years old; give after the bowels have first been cleared with castor oil or one of the other prescriptions given. You may use injections (enemas).

Homeopathic Treatment for Diarrhea.—

Chamomilla, 2nd dilution; Nux Vomica, 3rd trituration; Arsenicum, 3rd attenuation; Mercurius Sol. Homeopathic remedies, if given in tablet form, should be given every 1 to 2 to 3 hours and generally one tablet. If given in liquid form, 1 to 2 teaspoonfuls usually every 1 to 2 to 3 hours. If you use the 2nd or 3rd dilution put 10 to 20 drops in $\frac{1}{2}$ glass of water and give as directed.

How Many Stools a Day Should a Baby Have During the First Month?

Two to three a day for the first week and then one to two a day.

How Many Stools a Day Should a Baby Have After the First Month?

One to two or more, but more depends upon the character of the stools than on the number. They should be light yellow and inodorous (without special odor). Meat juices cause dark brown stools.

Does Diarrhea in Children Always Indicate Disease?

It is only a symptom. Green, slimy, foul, watery stools are always dangerous and need attention. Diarrhea may be a safety valve in the beginning, but if it continues it may cause serious trouble and needs attention lest serious loss of strength occur.

CHOLERA INFANTUM.

What are the Symptoms of Cholera Infantum?

The onset is sometimes sudden and without any premonitory symptoms but this is exceptional for there is generally a premonitory diarrhea which is so mild it attracts no attention. When, however, a weak baby has a persistent, foul smelling diarrhea, accompanied by marked loss of flesh and a dull mind, it should cause anxiety. If the features become suddenly pinched and the skin about the neck, face and hands becomes wrinkled, the case is alarming. Sometimes it starts suddenly with thirst, vomiting and loose bowels and the child is very ill from the start, with increasing thirst, vomiting, diarrhea and restlessness. The two main symptoms are vomiting and purging. Vomiting is often persistent and is first food, then some mucus and bile. The thirst is terrible but water, etc., when taken, are instantly thrown up in severe cases. Stools are frequent, watery and large, often painless and involuntary, sometimes looking like dirty water, sometimes without smell, while again the odor is terrible. Prostration is rapid, the fontanelles (soft places in the head) are depressed, the face is pale and pinched and the eyes are sunken.

When is Cholera Infantum Most Prevalent?

During heated time, in hot muggy weather. It occurs often in babies under 18 months old but more frequently in those under one year of age.

Are Bottle Fed Babies More Likely to Have Cholera Infantum?

Yes.

What is the Treatment for Cholera Infantum?

Homeopathic Treatment.—*Veratrum Alb.*, 3rd trituration, 1 tablet every hour, dry on the tongue for cases with much pain, violent thirst, great weakness, cramps in extremities, cold hands, feet and forehead.

Arsenic Alb., 3rd trituration. The same dose for the following symptoms, etc.,—watery burning stools, unquenchable burning thirst, great weakness and exhaustion, emaciation, thirst with great restlessness and vomiting. It will frequently control vomiting.

Allopathic Treatment for Cholera Infantum.—

For strong stools.—

Bismuth subgallate	1 dram.
Common soda	½ dram.

Mix, divide into 20 powders and give one every 1 to 3 hours. Lessen the food.

For frequent, loose, slimy stools with pain.—

Bismuth subgallate	1 dram.
Common soda	½ dram.
Dover's powder	10 grains.

Mix, and divide into 20 powders and give one every two hours as needed, for a child 9 to 12 months old.

Allopathic Treatment.—(Hare.)

Give 1/50 grain of podophyllin, dissolved in a few drops of brandy and mixed with a little water, every hour until three or four doses have been used; or, instead, use 1/500 grain of bichloride of mercury. This may be given and I think is better than the former. If there is much vomiting, drop medicine into mouth with a medicine dropper, a few drops at a time. When symptoms of collapse occur, surround the child with hot water bottles. Apply over abdomen (belly) the following spice poultice.

One tablespoonful each of allspice, cloves, nutmeg, and cinnamon. Moisten it with warm brandy or vinegar and renew as frequently as it becomes hard or dry. This is a very good remedy.

What Food and Care Must be Given a Baby with Cholera Infantum?

Discontinue milk. Give raw meat juice, a few drops at a time to a baby; if much prostrated a drop or two of brandy may be added. If nursing excites vomiting, stop for a time. To satisfy thirst, wrap a small piece of ice in a linen rag and let the baby suck this. Albumin water, given cold.

To prepare albumin water, take the white of 1 egg in ½ glass of water and stir slowly for five minutes; don't make it frothy; strain through a cheese cloth, sweeten and flavor if necessary and feed four teaspoonfuls every ½ hour. Enemas, if carefully given.

CONSTIPATION.**What Shall I Do for a Constipated Baby?**

If the mother is constipated, regulate her diet so as to produce regular stools. If necessary, she must use enemas for she must have one good passage daily or the baby will be affected.

How Should Constipation be Treated in Bottle Fed Infants?

Should skimmed milk (the proteids) produce it, as shown by curds or a

very gassy condition, it calls for more cream, sometimes more milk sugar or ordinary brown sugar in half the quantity, or some of the prepared foods. In infants over 9 months old orange juice may be tried. Sugar produces soft stools and if used too much the baby will have sore bowels and buttocks. Too much cream produces vomiting. Juices should be given $\frac{1}{2}$ hour or more before morning feeding. In older children reduce amount of white bread, toast and potatoes. Give graham bread, green vegetables, oatmeal and fruit. Raw scraped apples are very good.

Is Castoria a Good Remedy for Constipation?

It may be in some cases.

What Temporary Treatment May be Tried for Constipation?

Enemas of warm water, using from one tablespoonful upward according to age. Enemas of warm soapsuds, using same amount. Enemas of warm water and glycerine, one part of glycerine to three parts of water. Glycerine is irritating—look out for this.

These injections may be given with the soft rubber ear syringe in very young babies and with the soft rubber and hard nozzle syringe in older ones, or a hard rubber syringe with a smooth nozzle which has a capacity of six ounces.

Where injections are not convenient, a soap stick suppository may be used or a glycerine suppository when soap one does not act satisfactorily.

In obstinate cases not relieved by above means, use $\frac{1}{2}$ to 1 teaspoonful of sulphate of magnesia dissolved in 1 to 2 tablespoonfuls of warm water and inject into bowel and retain for an hour or two to soften stool. Press upon the anus at first so as to retain the liquid.

In some cases, as an enema, 1 to 4 ounces of warm sweet oil. A large piston syringe with large nozzle must be used.

The best suppository for continual use is the gluten suppository of the Health Food Company. Give them the first thing in the morning. They act slowly, usually taking about two hours. In obstinate cases one may be used at bedtime also. Great care should always be taken not to injure the baby. Cover well all objects entering the bowels with oil or vaseline.

Where none of these means succeed, the mother is driven to use some laxative such as castor oil, aromatic cascara, syrup of rhubarb, syrup of senna, etc., doses of which are always given on the bottle. The following is very good:—

Bicarbonate of soda	40 grains.
Aromatic syrup of rhubarb	4 fluid drams.
Syrup of senna	5 fluid drams.
Syrup of orange	1 fluid dram.

Give one teaspoonful two or three times daily, as needed. Give medicines in the morning and only enough to cause one stool. A teaspoonful of olive oil or a teaspoonful of black molasses is also good.

COLDS.

What is the Treatment for Cold in the Head?

Local Treatment.—Clean nostrils carefully with warm water as often as they are obstructed and grease the nose, lips and throat twice daily with one of these:—camphorated oil, sweet oil, olive oil, white vaseline, lard or goose grease. Put a very little into the nostril with a camel's-hair pencil, or soft

cloth on a small finger. Infants at breast, who cannot nurse, can be fed with a spoon for a time.

Allopathic Treatment.—

Where there is much fever and distress, give the following remedy. Put five drops of tincture of aconite into $\frac{1}{2}$ cup of water and give one teaspoonful every thirty minutes until the child perspires, then stop. This dose is for a child one year old; a smaller dose for one younger, say $\frac{1}{2}$ teaspoonful. This can be given with the following:

Biniodide of mercury	1 grain.
Milk sugar	100 grains.

You can get this medicine in tablet form, 1/100 of a grain to the tablet. Mix thoroughly and give a small pinch of the powder every two to three hours to a baby one year old. If there is no fever you need not give the first liquid as this alone is all that is necessary.

Homeopathic Treatment.—Aconite, 3rd dilution. Put 15 drops into a glass $\frac{1}{2}$ full of water and give two teaspoonfuls every one to three hours.

Arsenicum Alb., 3rd trituration—when symptoms are:—nose stopped up, difficult to breathe, sneezing, burning, watery discharge. Give one tablet the same as Aconite.

Nux Vomica is given in the same way for the same symptoms as Arsenicum, with these additional—constipation, indigestion or much gas in the bowels. Then it should be given instead of Arsenicum.

SORE THROAT.

What are the First Symptoms of Sore Throat in Infants?

Pain in swallowing, cries whenever it takes the breast or bottle and makes a forcible attempt to swallow. Generally there is fever and the child looks and acts sick.

What are the Remedies for Sore Throat?

In young infants rub the throat externally with camphorated oil.

Homeopathic Treatment.—

Aconite.—3rd dilution. Put 15 drops into a glass $\frac{1}{2}$ full of water and give two teaspoonfuls every one to three hours. This is good in the beginning. When sweating appears, give Belladonna instead, the same way and prepared the same.

Mercur. Biniodide, 3rd trituration.—1 tablet every two to four hours when there is much saliva in the mouth. This follows well after Belladonna. Apply cold compress on neck and give warm or cold drinks internally.

Another treatment is:

Biniodide of mercury	1 grain.
Milk sugar	100 grains.

(As above for cold in head.)

Mix thoroughly and give one dose, to a baby one year old, every two to three hours. If much fever give the following:

Tincture of aconite, 5 drops, in $\frac{1}{2}$ cup of water and give from $\frac{1}{2}$ teaspoonful to a teaspoonful every two hours to a baby from six months to a year old. This may be given alternately with the above powder.

If the bowels are constipated they should be opened with enemas or

some laxative before mentioned, such as castor oil, etc. The following is very good:

Calomel	1 grain.
Milk sugar	10 grains.

Mix thoroughly, and make 10 powders. Give one powder every hour until bowels move.

How can You Examine a Child's Throat?

Place the child on your lap or table, half reclining, hold its hands and head. Take a smooth handled spoon, insert gently between teeth; child will then cry and open mouth; push spoon to back of tongue and press down gently. Look for the tonsils (two lumps on the side) and look in back of throat. If the tonsils are swollen and very red the child may have tonsilitis. If they have white spots on them the child may have diphtheria.

SPASMODIC CROUP.

When Does Spasmodic Croup Usually Come On?

Usually at night.

Is Simple Croup Dangerous?

The ordinary croup of infants is spasmodic croup and is very rarely dangerous, although the symptoms are very alarming.

What are the Prominent Symptoms of Croup?

In a mild attack there is simply a noisy breathing, especially on drawing the breath, with a tight, barking, croupy cough. In severe attacks the child's breathing is more noisy and becomes difficult. There is a hollow, dry, barking cough.

Treatment for Croup.—Warm atmosphere; apply cold cloths externally to the front of the throat until feverish symptoms subside. You may also use hot cloths or poultices on the throat. You should have steam from a croup kettle or common tea kettle. This is made more effective if the child is put into a tent made by a raised umbrella or four connected posts with a sheet or thick covering thrown over them and the steam introduced beneath this tent. This is very good. A little lime in the kettle would aid much.

Homeopathic Treatment.—

If there is fever, alternate Aconite, 3rd dilution, with either Hepar Sulphur, 3rd trituration or Spongia, 3rd trituration; give one tablet every fifteen minutes, dissolved in water. Hepar is better when the cough is a little loose and child is light haired. Spongia, when cough is very hoarse, tight and barking. You do not need aconite unless there is fever.

Allopathic Treatment.—

Syrup of Ipecac. If symptoms are severe, give 10 drops every fifteen minutes until child vomits. To allay cough afterward, use—

Syrup of Dover's powder	1 fluid dram ($\frac{1}{2}$ teaspoonful).
Enough simple syrup to make	2 ounces (16 teaspoonfuls).

Mix, and give $\frac{1}{2}$ teaspoonful every two hours for a one-year-old child. Or, fluid extract ipecac, $\frac{1}{2}$ to 1 drop every 15 to 30 minutes, until vomiting occurs. Or, give $\frac{1}{2}$ to 1 teaspoonful (according to age) of powdered alum mixed with honey, syrup, goose grease, or water. It produces vomiting and sweating and loosens the cough.

Another Croup Remedy is—

Syrup of ipecac	3 teaspoonfuls.
Hive syrup	4 teaspoonfuls.
Water	1½ ounces.

Dose—½ teaspoonful every ½ hour until the child vomits and then repeat every two to three hours, if needed.

You may also put 1 teaspoonful of turpentine in the tea kettle and steam the child as above described for lime water.

Give enough onion syrup to make the child vomit. Onions fried half done in lard and applied to throat are also excellent.

MEMBRANOUS CROUP.

How Does Membranous Croup or Laryngeal Diphtheria Develop?

Very gradually.

What Should Be Done?

The room should be very warm. Hot cloths or poultices should be applied over the throat and either a croup kettle or tea kettle kept boiling in the room. To make this more effective, raise an open umbrella over the child or put it in a crib with a sheet raised on posts over it and introduce the steam beneath this tent. If the symptoms are urgent, 10 drops of syrup of ipecac should be given every 15 minutes until vomiting occurs freely.

What are the Symptoms?

The cough has a dry, brassy, croupy sound; it comes on slowly for days, becoming gradually worse. (Other croup is sudden and usually at night.) Breathing is difficult, becomes gradually harder and noisier. Day by day all symptoms increase and finally the child chokes unless relieved.

What is the Treatment?

Generally considered identical with diphtheria and so general treatment is the same. Antitoxin, intubation, tracheotomy; used early.

BIRTHMARKS AND MOLES.

Should Birthmarks Be Removed?

These grow rapidly the first two years—called “Nevi.” Should always be removed by a surgeon when infant is small.

What Can be Done for Moles?

Should be removed by a skilled physician or let entirely alone.

PRICKLY HEAT.

What is Prickly Heat?

This is a fine red rash appearing over any or all parts of the body. It appears, too, in adults and generally in very hot weather and is due to too much heat and perspiration and shows mostly upon the neck and upper part of the body. There is a light itching and tingling feeling. Resembles scarlet fever but there is no fever or sore throat and careful examination shows the rash thickest under the parts of the clothing where perspiration is profuse.

What is the Treatment for Prickly Heat?

Cooler clothing is always needed.

Citrate of Magnesia.—You may give a large dose if medicine is necessary, say one-half to one teaspoonful for a child one to two years old. Give frequent cool baths and anoint afterward with olive oil. For the itching, bathe parts with saleratus water, 1 teaspoonful to a pint of water; or, parts may

be dusted with starch powder. Cocoa butter is excellent. Rub the affected parts well with it.

ECZEMA.

Is This Very Common?

Most common of all skin diseases and also the most obstinate.

At What Age Does Eczema Occur?

It occurs at any age. Some of the worst cases are in infants one to six months old.

Where Does Eczema Occur?

Most frequently on the head, face, hands, crotch, groins and the joint folds.

What are the Marked Characteristics of Eczema?

Obstinacy in healing, tendency to return, moisture or weeping from the diseased surface.

What are the Symptoms of Eczema?

Skin is bright and in patches and is covered with minute vesicles (pimples) the size of a pin head. These soon rupture and discharge a sticky watery fluid which forms a crust of variable thickness with moist raw flesh underneath.

In other cases the skin is dry, red, thickened and somewhat scaly. In this form (salt rheum) the skin cracks readily and often bleeds. It may crack in other forms also.

What are the Causes of Eczema?

Sometimes hereditary. Frequently due to improper food. General weakness, bad hygiene, teething and any local irritations are also causes.

How About the Itching of Eczema?

This is almost unbearable and it is difficult to keep the child from scratching. Often prevents sleep. It is sometimes necessary to cover the hands and fasten them down to the side when sleeping. Take a piece of cotton two to three inches wide, pass under the back and fasten it to each wrist. Make it long enough to allow a little motion, but not sufficient to reach the neck or face.

What is the Treatment for Eczema?

In young infants all cleaning must be done with olive oil or disinfecting starch water. The irritated surfaces must be kept dry and excluded from the air by light cool dressings as heat always increases the itching. Under these dressings an ointment must be kept constantly applied and this ointment should be covered with paraffine paper.

Zinc Ointment.—

Oxide of zinc	2 drams.
Lanolin	5 drams.
Albolene	1 dram.
Salicylic acid	10 grains.

Mix thoroughly, and apply regularly as directed above. This is very good.

Beeswax Ointment.—

Benzoated lard	6 ounces.
Yellow beeswax	1 ounce.
Salicylic acid	20 grains.

Melt the wax in a tin cup and then add the lard. When all is melted remove from the fire and stir until cool, then add the salicylic acid and stir until cold.

This makes an excellent varnish for the face and hands when chafed as it is not readily noticed and is also very good for wet or raw surfaces on infants or adults, as it does not dry on. It is excellent for burns or scalds and will cure mild eczema. Where the surfaces are moist and keep wetting the dressing, a powder should be dusted on until this moisture stops, then the zinc ointment applied.

Perspiring Powder.—

Tannin	½ ounce.
Oxide of zinc	½ ounce.

Rub into fine powder and use as above directed. Where crusts form, use sweet oil liberally on the crusts and it will soon soften and remove them. Mothers must remember that eczema will always continue, if not completely excluded from air and moisture, also that no soap or water can be used. Use oil, as above directed. Any of the ointments given above are very good. It is well to have enough, for eczema is very slow to cure.

In general eczema, recourse must be had to the mask to give protection from the intense itching and scratching. Disinfect the skin with boric acid solution; boric acid ½ ounce to boiled water 1 pint, and apply the zinc ointment (above) freely and cover with pieces of gauze, leaving openings for eyes, nose and mouth. Apply to all diseased surfaces and hold fast with thin cool bandages applied for days without removal. When removed, all unhealed parts can again be covered until cure is effected.

Allopathic Medicines.—Keep bowels open with epsom salts, 2 oz. and cream of tartar, 2 ounces. Mix and give one-half to one teaspoonful every two to four hours to child one year old, until bowels move.

Homeopathic Treatment.—Arsenicum, 3x; Graphites, 6x; Sulphur, 6x; Rhus Tox., 3x.

When is Eczema Most Likely to Return?

In the fall.

MILK CRUST.

What is Milk Crust and What Can Be Done For It?

Due generally to neglect in removing the free sebaceous or oil secretion on the scalp, which, when allowed to remain, forms this crust. Keep thoroughly clean and if it occurs use treatment described for eczema, both local and general.

CHAFING.

What are the Causes of Chafing?

1. Want of cleanliness in changing and using diapers.
2. Acrid diarrhea.

What is the Treatment for Chafing?

1. Not too much or too strong soap.
2. Careful rinsing of the body.
3. Not too vigorous rubbing.
4. Free use of a dusting powder in all folds of the skin—starch powder or oatmeal powder. If necessary use the following:

Boric acid	1 dram (1 teaspoonful).
Glycerine	1 dram (1 teaspoonful).
Balsam Peru	1 dram (1 teaspoonful).
Vaseline	1 ounce.

Mix, and make an ointment and apply.

The beeswax and lard ointment given for eczema is also good.

Too much attention cannot be given to the diapers. They should be changed as soon as the child passes urine (water) or has a passage from the bowels. Diapers should be boiled in water to which soda has been added and before being again used should be aired and dried thoroughly by slow heat. Such care in addition to rules before mentioned will do away with chafing.

Another ointment for chafing and one which will not stain is:

Boracic acid	1 teaspoonful.
Glycerine	1 teaspoonful.
White vaseline	1 ounce.

Mix, and make ointment and apply to sore parts. The chafed parts may be cleaned with sweet oil and a little absorbent cotton, and the skin kept covered with a dusting powder composed of powdered starch, 2 parts and boric acid, 1 part. You may use this instead of starch or oatmeal. It is more healing for severe chafing.

But absolute cleanliness in taking care of discharges from the bowels and in changing diapers as soon as soiled by the urine (water) is necessary.

HIVES—NETTLE RASH—URTICARIA.

What Can be Done for Hives?

Be careful of the diet and give castor oil or salts. Not frequent in infants.

STOMACH RASH—TOOTH RASH.

What is the Treatment for Stomach Rash or Tooth Rash?

Baking soda	40 grains.
Aromatic syrup of rhubarb	4 fluid drams.
Syrup of senna	5 fluid drams.
Syrup of orange	1 fluid dram.

Mix, and give one teaspoonful two or three times a day to move the bowels.

CONVULSIONS.

What is the First Thing to be Done in Case of Convulsions?

Keep the child perfectly quiet with ice on the head, or cold water cloths if ice is not handy. Put the feet into a hot mustard bath and roll the entire body in large towels which have been dipped in mustard water, two heaping tablespoonfuls of mustard to one quart of warm water. Have plenty of hot water and a bath tub at hand in case a hot bath is necessary. If the child has something in its stomach that is injuring it, produce vomiting by tickling inside of throat. Be careful for it may bite your fingers. Put the handle of a tooth-brush, fork or knife in its mouth. Keep it there during the spasm, then it cannot bite your finger or its own tongue. If there is anything in the bowels, give an injection (large one).

When is a Hot Bath Useful for Convulsions?

If the convulsions have continued until the pulse is weak, the face very pale, the nails and lips blue, and the feet and hands cold, then the hot bath will be useful to bring the blood to the surface and relieve the heart, lungs and brain.

How is the Bath Given for Convulsions?

Water should not be over 106° (Fahrenheit). Apply test with a ther-

mometer if possible, otherwise you may burn or scald infants. If no thermometer is handy, plunge your naked arm into the water up to the elbow. It should feel warm but not uncomfortable. One-half teacupful of powdered mustard added to the bath is a good aid.

When is Another Convulsion Likely to Occur?

When a child does not become soft and natural after the convulsion, but remains stiff with the thumbs drawn into the palm and does not recognize the voice of its mother or attendant it will, usually, have the convulsion repeated indefinitely for hours.

Internal Medicine to Prevent Convulsions.—

Bromide of potash	½ dram.
Chloral hydrate	15 grains.
Simple syrup	2 ounces.

Mix, and shake bottle, then give one teaspoonful every hour, while the child is nervous or feverish, to prevent convulsions. This dose is for a one-year-old child.

Injection for Convulsions.—

Bromide of potash	5 grains.
Bromide of soda	5 grains.
Chloral hydrate	5 grains.
Water	2 fluid ounces.

Mix, and inject one tablespoonful into the bowel and repeat in two hours if needed.

DIPHTHERIA.

How Does Diphtheria Begin?

Sometimes suddenly but usually very gradually with sore throat and often swelling of the glands around the throat and under the jaw; with white patches upon the tonsils or soft palate or a very free discharge from the nose, which may be bloody. A very bad smell comes from the mouth. The largest number of cases occur from the second to the sixth year. (See General Diseases for description and treatment.)

MEASLES.

What are the First Symptoms of Measles?

Measles comes on rather gradually, from nine to fourteen to twenty days after exposure, with a cough, sneezing, watery eyes and nose, much like an ordinary cold. The eruption spreads slowly over the body. (See General Diseases.)

Is Measles a Serious Disease?

In infants and during the winter season it is likely to be very serious, because pneumonia (lung fever) and bronchitis may accompany it.

When and How are Measles Contagious?

In the early stage from the beginning of the catarrhal (cold) symptoms, two or three days before any eruption is present; less contagious after the eruption fades. It is not often carried by healthy persons and the infection does not cling long to a sick room.

What is the Treatment?

(See General Diseases.)

SCARLET FEVER.

What are the First Symptoms of Scarlet Fever?

Generally it comes on suddenly, in from three to five days after exposure, rarely later than a week, with vomiting, high fever, and sore throat (red, sore throat). The eruption usually appears within 24 hours as a red blush or pimply eruption first upon the chest and neck and spreads over the whole body.

When is Scarlet Fever Contagious?

Slightly contagious only during the first one or two days of the attack. Most contagious during the height of the attack and during scaling. It is often carried to others by healthy persons in clothing or bedding and by dogs and cats. Its poison clings to the sick room, furniture, etc. for years, unless thorough, genuine disinfection is carried out.

What is the Treatment?

(See General Diseases for Treatment.)

CHICKEN-POX.

What are the First Symptoms?

Usually appears gradually from fourteen to sixteen days after exposure as widely scattered pimples over the scalp, face and body, many forming vesicles (pimples with watery yellow fluid in them). Don't scratch them or scars will result. The child is usually not very ill. Measles and chicken-pox are very contagious.

(For Treatment see Contagious and Infectious Diseases.)

WHOOPIING COUGH.

How Does Whooping Cough Begin and What are the Symptoms?

Whooping cough seems like a cold on the chest for a week or ten days. Cough becomes gradually harder and harder and lasts longer; gets to be spasmodic; the child gets very red in the face and sometimes vomits food. After a severe coughing fit it catches its breath with a peculiar noise known as the whoop. It comes on in from one to two weeks after exposure and lasts six weeks or longer. Whooping cough can be contracted in the open air.

What is the Treatment?

(See General Diseases for further description.)

GERMAN MEASLES.

What are the Symptoms of German Measles?

This is a distinct disease. It comes on something like a cold, usually some sneezing. It is not generally serious; usually a very extensive eruption which may cover the body. There are but few general symptoms. (See General Diseases for Treatment.)

RHEUMATISM.

What are Growing Pains?

Really rheumatism.

Do Babies Often Have Rheumatism and What Can be Done For It?

No; if an infant cries whenever it is handled or moved it is reasonably certain that it has rheumatism or rickets. Rheumatism comes on suddenly with fever. (For further description see General Diseases.)

RICKETS.

What are the Causes of Rickets?

Generally insufficient and badly chosen food. Nursing babies are seldom troubled unless the mother is herself ill or continues nursing too long, that is, into the second year. They may look plump and fat but they are weak and do not walk early. The teeth are more or less delayed and decay early.

What are the Symptoms of Rickets?

It is always suspicious if the child has no teeth at the end of the first year. It is very suspicious if the anterior fontanelle (soft spot on front of head) is as open as it was some months previously. It should be closed in a well nourished infant by the 15th to 20th month. If, in addition to these symptoms, it has sweating about the head whenever it sleeps, if it cries whenever it is handled and dislikes play and sports which other children of like age delight in, it is pretty conclusive evidence that the child has rickets. There is generally an enlargement of the wrists and ankles and the head becomes square or box-shaped.

At What Age is Rickets Most Common?

Between six months and two and a half years.

What is the Treatment?

The child should have plenty of fresh air and sunshine. Look carefully after the urine (water) as soon as it becomes smoky, has a strong odor, is irritating to the skin and stains the clothes. It is due to unsuitable food. Reduce the amount, or change the food. Look carefully to the stools and take alarm as soon as they become foul, bad colored, pasty or of variable consistency. Select the proper food. This is essential. When a child shows any signs of rickets some iron tonic should be given with a perfect diet. The following is good:

Allopathic Treatment for Rickets.—Buy an ounce of syrup of iodide of iron or syrup of iron phosphate and give three to ten drops three times a day for a one-year-old child. Continue this for one to three months or longer.

Homeopathic Treatment for Rickets.—*Calcarea Phos.*, 3rd trituration—one tablet three to four times daily for months. The idea is to get proper food. They generally recover but are sometimes left deformed if treatment is not commenced soon enough.

USES OF SOME SIMPLE HOME REMEDIES.

USES OF SALT.

1. **Neuralgia, Toothache, Earache, Etc.**—A bag of warm salt applied to the affected parts is very soothing in affections of this kind.
2. **Hemorrhage, or Bleeding from Stomach or Lungs.**—In case of bleeding from either lungs or stomach eat two teaspoonfuls of dry salt or drink strong salt water. Many physicians use this treatment and it has saved many lives when a doctor was not at hand.
3. **Croup.**—Give a teaspoonful of salt mixed with a teaspoonful of honey or molasses if the baby has croup. It is a safe and reliable remedy.
4. **Diarrhea and Dysentery.**—Salt dissolved in vinegar and warm water often checks diarrhea and dysentery.
5. **Cholera Morbus.**—For cholera morbus use salt the same as for diarrhea and dysentery above, except that a teaspoonful of strong pepper should be added.
6. **Dyspepsia and Stomach Troubles.**—Salt water often proves an effective remedy for stomach troubles. Take half a teaspoonful in cold water before breakfast.
7. **Colic.**—A teaspoonful of salt dissolved in half a cup of cold water is a speedy remedy for colic.
8. **Tonic, Purgative, Internal Antiseptic and External Stimulant.**—Salt possesses all these properties.
9. **For Bath.**—Salt added to the bath is a cleanser and it also beautifies and strengthens.
10. **Tooth Wash.**—Salt will remove tartar from the teeth. Mixed with equal parts of soda it makes a good tooth powder.
11. **Mouth Wash.**—A strong solution of salt and water is excellent for hardening sensitive gums.
12. **Sprains and Swellings.**—Sprains may be relieved and swellings reduced by bathing freely with salt water.
13. **Antidote.**—Taken moderately, salt is an antidote for alcoholic poisoning.
14. **Hair Tonic.**—Salt water is an excellent hair tonic.
15. **Worms.**—Injections of salt water are excellent for removing pin or seat worms.
16. **Catarrh.**—Salt water snuffed up the nose several times daily is a simple remedy but one of the best for catarrh.
17. **Eye Wash.**—Sore and inflamed eyes may be cured and strengthened by frequently bathing them with salt water. Try it.
18. **Ague.**—In some cases salt has been used successfully in the treatment of ague. It is used in half-ounce doses.
19. **Hives.**—Add an ounce of salt to each 15 gallons of water used in the bath and you will obtain relief from the itching of hives.
20. **Heartburn.**—Frequently allow a few grains of salt to dissolve in the mouth and you will obtain relief from heartburn.

21. **Sore Throat.**—Frequently gargle with salt water. Often nothing else is needed.

USES OF LEMONS.

Each lemon yields from 2 to 8 drams of an acidulous juice containing from 7 to 8 per cent. citric acid besides phosphoric and malic acids in combination partly with potash and other bases. Should one be surprised then that the lemon is valuable in the treatment of so many diseases. A solution of citric acid in water (34 grains to an ounce) corresponds in acidity to fresh lemon juice but is not so good for medical purposes on account of the absence of the other constituents.

1. **Sore Throat and Diphtheria.**—Lemon juice is an excellent gargle for sore throat and is also effective in the first stages of diphtheria. If desired, a little sulphur may be mixed with it.

2. **Corns.**—A piece of lemon bound on the corn is an old and well-tried remedy.

3. **For Removing Tan and Freckles.**—Lemon juice is very effective in the removal of tan from the face and hands. Also good for freckles.

4. **Colds.**—Hot lemonade is a reliable remedy for colds when sweating is necessary.

5. **Coughs and Hoarseness.**—Lemon juice with sugar and flaxseed tea is excellent for coughs and hoarseness; or, the lemon juice may be used alone.

6. **Scurvy.**—Nothing is better as a preventive or cure of scurvy than lemon juice.

7. **Fevers.**—Lemonade is a refreshing and useful drink for fever patients.

8. **Rheumatism and Gout.**—Give one or two ounces of lemon juice in water three or four times a day.

9. **Jaundice.**—Give a tablespoonful of lemon juice four or five times a day.

10. **Biliousness.**—Three or four times a day give one or two ounces of lemon juice in either cold or hot water.

11. **Hemorrhage.**—Taken internally lemon juice tends to stop bleeding from the stomach.

12. **Vomiting.**—Lemon juice or lemonade will often quiet the stomach and stop vomiting.

13. **Erysipelas.**—Lemon juice is sometimes used for erysipelas and especially in combination with other remedies.

14. **Asthma.**—Add a tablespoonful of lemon juice to any of the mineral waters and take three times a day. This frequently produces good results.

15. **Antidote.**—Vegetable acids are antidotes for poisoning by alkalis and lemon juice is a vegetable acid that is usually at hand.

16. **Syphilis.**—In connection with the regular treatment lemon juice may often be used to advantage in the treatment of this disease.

17. **Headache.**—Very frequently lemon juice will be found beneficial as a remedy for headache.

USES OF KEROSENE OIL.

1. **Rheumatism.**—Kerosene applied with thorough rubbing frequently does a world of good in cases of rheumatism. Petroleum was a favorite remedy of the Indians for this painful ailment.

2. **Croup.**—For croup kerosene may be taken internally and also applied to the throat.
3. **Toothache.**—Frequently relief is obtained from toothache by wetting a piece of cotton in kerosene and inserting in the cavity of the tooth.
4. **Colds.**—Every two or three hours take ten or twelve drops of kerosene on a lump of sugar. Also rub the neck and chest.
5. **Sore Lungs.**—Wet a cloth in kerosene and bind on the chest at night. Also take ten drops internally three or four times a day.
6. **Diphtheria.**—Swabbing the throat every two or three hours with kerosene will remove the membrane and reduce the inflammation in diphtheria.
7. **Quinsy.**—Kerosene may be used to advantage both internally and externally in the treatment of quinsy.
8. **Lice.**—Kerosene will destroy lice and other vermin.
9. **Dandruff.**—A little kerosene mixed with glycerine will cleanse the scalp and remove dandruff.
10. **Poisoning.**—In case of vegetable poisoning apply kerosene externally until relief is obtained.

USES OF BORAX.

1. **Eye Wash.**—A little weak borax water dropped into the eyes is excellent for weak or inflamed eyes.
2. **Tooth Powder.**—Borax is a good tooth cleanser. A good tooth powder is made by mixing $\frac{1}{2}$ ounce of borax with 3 ounces of precipitated chalk and adding a few drops of oil of wintergreen.
3. **Washing Powder.**—Add a handful of borax to 10 gallons of water and washing will be made easier. It will not injure delicate fabrics.
4. **Dandruff.**—A little borax in the water will remove dandruff and cleanse the scalp.
5. **Roach Exterminator.**—Borax scattered in places frequented by roaches will drive them from the premises.
6. **Catarrh.**—Pulverized borax used as a snuff is an excellent catarrh remedy.
7. **Hoarseness.**—A small bit of borax held in the mouth and swallowed slowly relieves hoarseness.

SUPPLEMENT.
(Additional Recipes.)

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Mrs Alice Gitchell Kirk

THE PEOPLE'S HOME RECIPE BOOK



BOOK II OF THE PEOPLE'S HOME LIBRARY



BY
MRS. ALICE GITCHELL KIRK

LECTURER AND INSTRUCTOR
IN DOMESTIC SCIENCE.

AUTHOR "MRS. KIRK'S CARD INDEX,
COOKING RECIPES" AND "HANDY
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AUTHOR'S PREFACE.

Though the world is full of cook books of every description, yet it has been my experience that there are few of them that are more than a collection of recipes. There are few really good teachers of the science of cooking. For the past thirty years the author has been engaged in teaching of some kind, ranging from kindergarten work to assistant at Chicago University and from private teacher of cooking to Public Lecturer on Domestic Science. This training has not only given me a knowledge of the subjects in hand but has perhaps rendered me capable of imparting this knowledge to others in a way to be easily understood by all.

Having managed a home of my own for twelve years and having lived in both the country and the city have probably given me a knowledge of the practical needs of the average home. Further than this, I am called upon regularly each week by 'phone to direct the culinary affairs of many Cleveland homes, thus giving me the practical experience which is lacking in so many teachers of Domestic Science. Furthermore, during the past five years I have delivered (and am still engaged in the lecture work) a series of over six hundred public lectures on cooking, a larger number than ever before delivered on this subject by any woman in one place. These things have brought me in direct contact with thousands of people of all classes, given me a knowledge of their needs and at the same time fitted me for imparting this knowledge to others in a practical way.

Having been principal of private schools and being at the present time a member of "The Domestic Science and Art Association" of Cleveland, and "The American Home Economics Association" of Chicago, and also State Secretary of "The Associated Clubs of Domestic Science" has brought me in contact with many of our ablest instructors in Domestic Science and afforded me an excellent opportunity to get the best and most modern ideas relative to the science of cooking. These ideas I have endeavored to incorporate in this work, leaving out the technical things and making them practical for the home.

I believe in having system in the home and a business-like management of household affairs as is attested by the fact that I am author of "Mrs. Kirk's Card Index Cooking Recipes" and also of "Handy Expense Cards for Housekeepers" and "Correct Combinations of Foods for Daily Use."

I have given over two hundred of my choice recipes in this work and for these I have adopted the form used in my "Card Index Recipes." It will be noticed at a glance and without reading the recipe, one can tell just what materials are required and the quantities of each. One can also tell the utensils that are necessary and thus have everything in readiness before beginning the work. Then are given full and complete directions for putting together and cooking the ingredients. These directions I have endeavored to make so simple and complete that the girls and the young housewives with no previous

experience can use these recipes and be certain of good results. Though the cook with many years of experience may become so skillful that she can "guess" at quantities and generally get good results, yet it is necessary for the inexperienced to observe absolute accuracy in following every instruction. In fact, the time has gone by for "guessing" at quantities. Use accuracy and you will never have failures for the same cause always gives the same results.

Preceding each chapter will be found the general principles underlying the science of cooking and I believe it will pay every woman to carefully study and follow these rules, for cooking is now as much of a science as is any other branch of knowledge. I believe that cooking and the management of household affairs should be a pleasure rather than a drudgery. I believe that a knowledge of proper foods and the proper way of preparing them is one of the most important sciences, for our health and temperament, and consequently our happiness and success in life, largely depend upon what we eat.

Though the two hundred recipes make dainty and attractive dishes, yet I have had due regard to economy and the "Favorite Home Recipes for Every Day Use" have been gathered from mothers living in all parts of the world. They are the dishes "like mother used to make," and I believe they will be found the most simple and practical collection of recipes for every day use that has ever been published.

It has been my object in this work, not only to give some of the general principles underlying the art of cooking, but also to give simple and practical recipes that can be used in every home in the country.

THE AUTHOR.

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THE HOUSEKEEPER'S SCIENCE OF COOKING OR DOMESTIC SCIENCE IN THE HOME.

"Good cooking means the knowledge of all fruits, herbs, balms and spices, and all that is healing and sweet in fields and groves, and savory in meats. It means carefulness, inventiveness, watchfulness, willingness and readiness of appliances. It means the economy of your great-grandmothers and the science of modern chemists."—*Ruskin*.

THE HOUSEKEEPER'S CREED.

I believe housekeeping and cooking is and should be interesting and worthy work and that the majority of women would enjoy it if they had the opportunity to know more of its science; that it must be considered elevating—the highest art—and not a menial and brainless occupation. If a man is not ashamed of his profession or work, there is no reason why a woman should be ashamed of hers.

I believe before marriage every woman should show to the man she is to marry that she thoroughly understands the work of making and keeping the home on a perfectly systematic and business basis, as much as the man has shown her that he has a profession or business capable of providing the income for the maintenance of home and family.

I believe that marriage is a life partnership with mutual interests as well as love; a partnership of square dealing and equally shared responsibilities, and should not be entered into from any other motive.

It is reasonable to suppose that the young woman should be able and willing to keep house as conscientiously as she has taught school or music or used the typewriter.

Can you use the salary of the young man wisely, economically and so that each of you may live comfortably, besides saving a little for the proverbial "rainy day?" This question should be answered before marriage.

I believe home making, housekeeping and all that goes with it is not drudgery, is not a narrow sphere for the woman, but that it is the very highest type of living.

"He who gives us better homes, better books, better tools—a fairer outlook and wider hope—him will we crown with laurel."—*Emerson*.

WHAT CONSTITUTES HOUSEHOLD MANAGEMENT.

Not many years ago everything made to meet the needs of the people was created in the home. Now, as different shops and factories have taken most of the productions and developed them into large and flourishing industries and manufactories, there are two problems always to face, and these are—production and consumption. It is interesting to watch the wonderful strides of today in producing wealth, but it is of at least equal importance how this money is spent; and the home is the center for the consumption of this wealth. It has been said by students of Home Economics that the greatest financial losses come through the home. If this be true, then women should begin to have a better understanding of the practice of economy in the home. First, they should help and encourage in every way to increase the income; and

second, to lessen the expenditures. It is not always what we earn, but how that is spent that insures the best economy and results in perfect, or nearly perfect, household management. At the present time the difficulty with the housekeeper is not so much that she has lack of income, as that she does not always spend wisely.

Women are almost having their first real awakening to the fact that they must acquire more knowledge and skill to do the work in the home successfully and thus live better and have greater enjoyment and prosperity.

Home-making is, or should be, a business. The home has close business relations with the grocer, butcher, merchant, bank and in fact the business world in general and only business-like methods can succeed.

Begin early in life with your daughters and train them in systematic household management and home-making and there will be fewer financial failures in the business world.

HOUSEKEEPING A PROFESSION.

Housekeeping has passed the days of mere drudgery and now ranks among the professions.

There is much thought exercised by the well trained and thoughtful housewife who plans and directs and knows herself how to do any of the work in the home.

We know this work takes more brains than dollars, and education and training are necessary for the woman who selects the food, clothing and all the works of art for the uplifting and growth of a well-balanced family, mentally, morally and physically. She should be trained in the estimation of values, in food, clothing and household furnishings.

She should have had practice in the various duties of a home before marriage. Otherwise the expense comes at the wrong time, which is unjust to the man. Mrs. Ellen H. Richards says, "By teaching the girl under fourteen how to cook, she will do it naturally and easily when she is a housewife." If women knew how to do this work well, it would cease to be a drudgery.

A good business man has to know his business thoroughly and apply to it ordinary business principles and systematic methods in order to succeed. The same is true of housekeeping.

HOME EXPENDITURES AND ACCURATE RECORDS.

"An economical household, not a stingy one, makes a successful and contented home."
—Freeman.

"In olden times women thought and thought before they spent, often making the spending a burden. Now women often spend and then think and think and think." There should be some happy medium.

If we have studied pure foods, good taste in dressing and the same in furnishings for the home, we have made great advance in the lessening of home expenditures. Accurate accounts should be kept of the allowance for such use and what it is spent for. There are many ways of doing this but one of the simplest is a card index system on which the expenditures for the day, not itemized, but headings, may be quickly noted and footed up at the end of the week. This is absolutely necessary for system and economy in the home.

It is true, that all the members of the family must unite in this if it is successful. They must all agree upon a universal or given standard of living. It is better to divide the income to cover the necessary expenditures and then try to live within it. The figures must be before you or you will find waste and more waste. One housekeeper recently said to me in trying my Expense

Cards, "I found I was not losing on my regular expenditures, such as groceries, etc., but my 'miscellaneous' was appalling." Twenty-five cents today and another tomorrow seems very little but for a month or year it means much loss.

ORGANIZATION AND DIVISION OF LABOR.

It is very easy for most of us to imagine the home where no system or organization exists.—There is no order; things are placed here today and there tomorrow and valuable time is spent in searching for articles which have no settled resting place. This kind of living, or staying, more properly speaking, reacts upon every member of the household. The work is much harder and costs infinitely more in time, strength and money than a definite and well regulated home would cost. "It is not the revolution that wears out the machinery, it is the friction," and nowhere is this so true as in the home. If the housewife has had no training or experience her troubles are legion. It is first in knowing how and what to do, the proper division of this labor, and when it is to be done. It makes very little difference whether it is the woman with no servants or one with several. It is now conceded by every thinking individual that the housewife must not only know how the work is to be done; but must be able to plan, systematize and direct the same.

Applying this knowledge every day, one need not carry the kitchen or three meals a day "on their shoulders" from morning until night, but have regular hours for definite and systematic work, recreation or study. It is very easy to direct "Mary" to do the washing, bake a cake and have company for dinner, and it is quite another thing to know the necessary time required to do these things.

System is the keynote of the home. Each day's work should be planned in advance; in fact, a written or printed plan of work should be in every kitchen. Then a written menu of the meals. These may be written on cards, one for each day of the week, and indexed under the card index system so universal now. On the opposite page may be references showing where recipes for certain dishes may be found, or any other notes. The grocery order should be made out and the refrigerator consulted at the same time. "Woman's work," it is said, "is never done." It has been largely her own fault. Plan, systematize, and pigeon-hole your work; in other words, get rid of it, which will be a wonderful care-remover.

Woman's life, as a rule, is made up of little things. This is particularly true in the spending of small sums of money; five cents here and there, then a dime, quarters and dollars until in this small spending they do not realize that "tremendous whole."

I repeat, housekeeping is a profession and it is the careful watching of just the right time to buy, and what to buy, that constitutes good household management. Much depends on the manner or style of living whether you should buy in large or small quantities. Find the happy medium between the hand to mouth style of living and the buying in too large quantities, which may mean waste. Marketing is an art. We had better say to market well is an art. Buy foods in season as nearly as possible. If you can only purchase a little, buy that which is good and use every bit of it. It is the little wastes that fill the garbage can.

A WELL EQUIPPED KITCHEN AND THE UTENSILS.

"The best is the cheapest" is a good rule to follow. In many homes the surprise is that the meal can be prepared with the meager kitchen equipment

provided. Be proud of your kitchen and utensils but take care of them. The very best of utensils may soon be useless if placed over too hot fires, especially gas. On the other hand a medium priced article in the hands of a skilled worker may outwear the very best utensil in the hands of a careless one.

Many accessories in the kitchen have come to be looked upon as "must haves" through long use. The evidence of utility in everything, together with good taste and judgment in every selection, are the great essentials in buying kitchen as well as other utensils.

Fireless Cookers and Steam Cookers are doing much to overcome this, as in either of these methods of cooking neither food nor utensils can be burned. Do not buy every new thing that comes out. Find out whether it is of practical use, then buy it and use it. Too many articles and in inconvenient places are as bad as not enough. Have a convenient drawer or hook for utensils and always have them in that place and no other.

The Fireless and Steam Cookers and Bread Mixers are among some of the kitchen utensils that have come to stay and it is the intelligent, thinking, up-to-date housekeeper that is looking for the practical, helpful and attractive equipment for her kitchen.

KITCHEN UTENSILS.

Range	Meat and bread knives
Refrigerator	Loaf pan, square, oblong or oval
Steam Cooker	Sponge cake pan
Fireless Cooker	Sink strainer
Tea kettle	Scales
3 stew pans, 1 qt. to 3 qts.	Soap shaker
Steel spider, 9	Potato and vegetable press
Double boiler, 2 qt.	Salt box
Steel frying pan, 7	Grater
Toaster	Measuring cups, 1 tin and 1 glass
Frying basket	Lemon squeezer, glass
Spatula	Pie plates, 2 or more
Muffin pan	Skewers
Colander	Skimmer
Coffee pot	Table spoons, 3
Tea pot	Tea spoons, 3
Food chopper	Measuring spoon
Chopping knife and bowl	Bread box
Strainers	Funnel
Bread mixer	Vegetable and pudding dishes, 2
Bread pans, 2 or more	Potato masher, wood
Bread board	Garbage pail
Rolling pin	Waste basket, closely woven
Flour sieve	Receptacles for flour, sugar, cereals, condiments, molasses, etc.
Pans or basins, 2 or more	Kitchen cabinet or table
Bowls, about 5 in assorted sizes	Chair
Dish pan	High stool
Drainer	Slotted wooden spoon
Floor and stove brushes	Wooden spoon, small size
Broom	Casserole
Steel knives and forks, 3	Custard cups
French vegetable knife	Tin mold
Vegetable brush	Coffee mill
Cream whip	Clothes hamper
Egg beaters, Dover and flat wire beater	Carpet sweeper
Covered roaster	Mrs. Kirk's Card Index Cooking Recipes
Cake pans, layer, 2	Mrs. Kirk's Housekeeping Expense Cards

LAUNDRY EQUIPMENT.

Wash tubs, 2 medium, 1 large	Soaps
Wash board, medium	Clothes basket
Clothes pins	Ironing board
Clothes line	Irons
Boiler	Clothes stick
Wringer	Clothes pole
Wash tub bench	Clothes horse
Bluing	Small vegetable or nail brush (for fringes)
Starch	

HOUSEKEEPER'S EVERY DAY SCHEDULE.

"In any community organized on really healthy lines, the average woman will have quite enough to do in her own home, whether she is rich or poor. Nowhere else can she do work of such value to the nation."—*Theodore Roosevelt*.

Kitchen calendars or schedules have probably been written for nearly every cook-book published. It has been a serious question in my mind how much time and thought to devote to this. If the housekeeper will use it, it is worth while. If she is a "guess cook" or "near enough" it would be waste of time to prepare it.

With the thousands of women with whom we have come in contact in the past four years, I know they are steadily advancing along the line of better and more wholesome living, and more accurate cooking. By such these pages will be read and consulted or a copy made and framed to hang in the kitchen. One of the most difficult problems the housewife has in her cooking is determining the temperature of the oven for baking. Moderate, hot, very hot, cool, etc., may not mean the same thing to one that it does to another. Thermometers are coming into general use, are inexpensive and will do much to not only relieve the anxiety attending the baking, but there will not be failures as before when it was all guess work. We are learning to be systematic and accurate in all that pertains to housekeeping and cooking; and as a result work is easier and we have better cooked foods with fewer failures.

A half-pint measuring cup of tin or glass can be purchased at any department store for five or ten cents, and it is standard for all recipes given. Do not expect perfect results using a tea cup one time and a coffee cup another, or guessing at the halves, thirds or quarters. No matter what your experience or judgment, in order to have a recipe give perfect results, **always**—with all conditions equal—there are certain measurements which must be strictly followed.

TABLE.

1	cup equals	$\frac{1}{2}$	pint or regular measuring cup
4	tablespoonfuls	$\frac{1}{4}$	pint or regular measuring cup
1	gill equals	$\frac{1}{2}$	pint or regular measuring cup
1	pint equals	1	pound
1	cup of butter	$\frac{1}{2}$	pound
$2\frac{1}{4}$	cups powdered sugar	1	pound
2	cups of sifted flour	$\frac{1}{2}$	pound
1	rounding tablespoonful of flour	$\frac{1}{2}$	ounce
1	rounding tablespoonful of sugar	1	ounce
1	rounding tablespoonful of butter	1	ounce

GENERAL TIME FOR COOKING VEGETABLES.

Boiled Potatoes	30 minutes
Boiled Rice	15 to 30 minutes
Baked Potatoes	45 minutes
Boiled Sweet Potatoes	35 minutes
Baked Sweet Potatoes	45 minutes
Boiled Turnips	20 to 30 minutes

New Carrots	30 minutes
Old Carrots	60 minutes
Green Corn—boil	5 to 10 minutes
Green Peas, fresh	15 minutes
Green String Beans	45 minutes
Green Shelled Beans	45 minutes
Green Lima Beans	30 minutes
Sliced Cabbage	20 minutes
Boiled Cabbage	1 hour
Cauliflower	30 minutes
Squash	20 minutes
Stewed Tomatoes	20 minutes
Onions	45 minutes
Celery	30 minutes
Baked Bananas	30 minutes
Baked Apples	25 minutes

BAKING.

"She can bake, she can broil, she can fry,
 Ne'er a cake does she spoil, nor a pie,
 She's perfectly neat,
 Her temper is sweet,
 And this is the reason why."

Much depends upon the regulation of heat in planning any definite time for baking; an oven may be slow for some things, quick for others and so on. Follow recipes and note the time and kind of oven given; this will be of more service to the housekeeper than all the tables ever written. Bread and cake cannot be baked once or twice in three months and you know much about temperature of the oven. This knowledge of ovens only comes by continual practice, or, as before stated, by the use of a thermometer often enough to become perfectly familiar with its registrations.

TABLE SETTING AND SERVING.

(Table Etiquette.)

When hearts are light and spirits gay

You almost hear the table say:

"These people give me hearty cheer,
 I'm very glad they're round me here."

If food is wholesome, linen white,
 China and silver polished bright,
 With pride the table spreads its leaves,
 Glad to dispense what it receives.

With friends in loving converse near
 The table speaks for all to hear.

It says as plain as table can:

"Draw round me all, I'm spread for man."

—*Table Talk.*

The duty of setting the table usually falls to the daughter of the house, if there is one. If not, the mother has this added responsibility if she has no helper in the home, and even then, if she wants care and neatness in this most artistic work, as the maid of all work does not have time to devote to it. There should be a certain personality in the setting of a table that belongs to some member of the family. And there are some absolutely fixed rules for the placing of the service on the table.

In the first place the linen should be spotless and white and as fine as your style of living will warrant; the simpler linens for every day use and the finer ones for special occasions. They may be all this, but if they are not ironed with great care and the corners of cloth and napkins folded perfectly even, the very foundation of table setting is a failure.



(Photographed especially for this book.)

NO. 1. TABLE LAID FOR SINGLE SERVICE FOR INFORMAL DINNER.
LAID FOR SOUP COURSE.

The soup plate is on a service plate which is an eight or ten-inch plate. Observe closely the accuracy with which knife, fork, spoons, goblet and other service are placed on the table. The soup spoon is placed to the right of the knife and the soup ladle to the right of the soup spoon. Using left hand for removing cover of tureen, you are ready to take the ladle in right hand and serve soup which may be passed to other members of the family at table.

The water glass or goblet should always be placed at end of knife blade. The bread and butter plate is on the left side at end of fork. The silver is always used from the outside toward the plate, either from right or left. Napkins should always be placed on left side of fork. Twenty-four inches is the usual space allowed for each cover or person.

Have a soft pad or under-cloth on the table before the cloth is laid. The linen then wears better, looks richer, and there is less noise from the dishes and silver. Lay the cloth perfectly smooth and straight, being careful in doing this not to make a wrinkle. Place the knives to the right of each place with the blade turned toward the plate and the fork to the left, each one inch from the edge of the table and allowing about twenty-four inches for each guest. Place teaspoons to the left of the fork and soup spoons and oyster fork to the right of the knife. Do not place too much silver on the table at once; better have it brought in later, as needed, by the one doing the serving. Place the butter plate back to the left of the tip of the fork, and the water glass to the right at the tip of the knife.

The napkins should be folded perfectly square and placed to the left of the forks. The remaining setting of the table all rests entirely upon the ingenuity and good taste of the housewife. Just a suggestion—keep it simple rather than have too much on it. Nothing speaks more loudly for the refinement of a family than the perfectly set table.

In the serving, when a maid is in attendance, all food should be served from the left side. If it is passed, to be set down, from the right side. Nearly eighty-five per cent. of the families are without help in this country; consequently, most of the serving is done at the table; or, members of the family take turns and in this manner there is less confusion.

BREAD MAKING.

(Including Muffins, Rolls, Pop-Overs, Gems and Griddle Cakes.)

“Full many a gem which should have raised serene,
Burns to a crisp behind the oven door,
And many a sack of flour is borne to burst unseen,
And waste its whiteness on the kitchen floor.”

Flavor, in bread, by many people is considered one of the first requisites; and the difference in flavors is entirely due to the amount of soluble carbohydrates and the kind of flour which will produce the greatest per cent. of gluten both in quality and quantity; and again upon the fermentation used in the making.

Every housekeeper who wishes to be able to make perfect bread, should acquaint herself thoroughly on the subject of “flours.” And any of the best cook-books will enlighten her on the subject with very little effort on her part. The housekeeper must know all she possibly can of flour, yeast, fermentation and baking, in order to attain anything like success. There are two distinct kinds of flour called Spring and Winter.

The Spring wheat is stronger and contains the greater amount of gluten (muscle building food), and for this reason will retain more moisture and produce a greater number of loaves of bread than the Winter. I mean by this the hard Spring wheat. Personally, I prefer a blending of Spring and Winter wheat, providing the mixture is largely Spring.

A good bread flour should be a rich creamy yellow, rather “sandy” in feeling and should fall apart easily when taken between the thumb and forefinger. Good pastry flour is not so yellow in appearance and is easily packed into a little cake, when pressed between the thumb and forefinger.

In the following recipes for bread making it has not been possible to give the exact amount of flour, as different flour, even from the same mill, requires more or less liquid.

These liquids may be water, milk, or milk and water together. The most wholesome bread is made without butter or lard. If you are in doubt about your yeast, a little sugar may be used, which will help to create the necessary activity. Of course, you will not expect good bread from poor yeast; but the sugar will aid the growth of yeast plants still alive. Butter and lard retard the yeast and when used a little additional yeast should be supplied.

Bread should be well kneaded and this is more easily accomplished by using a Bread Maker. It is the only hygienic way to knead the bread, and these machines can be purchased at from \$1.35 to \$2.50 and are a great saving both of time and labor. Bread can be well made and spoiled in the baking. The oven should be ready for the bread, and that at a temperature of what is called a "quick" oven, or if you use the oven thermometer ten minutes after 12 for twenty minutes, and then cooling to five minutes of 12, for the remaining twenty-five minutes. Remove the bread from the oven; do not cover, but allow the air to circulate freely around it. When cool place in a clean, dry, bread box, which has been washed, dried over a little heat and closed to keep out any particles of dust, which carry germs, producing mold.

Mrs. Kirk's Card Index Cooking Recipes.
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Recipe 1.

VERY BEST BREAD.

Materials.	Measure.
Milk	1 Cup
Water	1 Cup
Salt	1 Teaspoonful
Compressed Yeast....	$\frac{1}{2}$ Cake
Bread Flour	6 Cups

DIRECTIONS.

Have the bread mixer clean, scalded and screwed in place. Low, if you wish to sit down to use it and high if you are going to stand, so you do not have to stoop. Put the milk and water into the stew pan and bring to the scalding point. Pour this into the mixer and let cool to lukewarm. Dissolve the yeast in half a cup of lukewarm water, add a little flour, about two or three teaspoonfuls, cover and set this to rise, while the milk and water mixture is cooling. When that is luke-

UTENSILS:

Bread Mixer	Measuring Cup
Stew Pan	Measuring Spoon

warm, add the yeast sponge, and only 5 cups of the flour all at once, with the salt. It is better to add the remaining cup of flour as you see that it is needed, but be very careful and not put in too much flour as this will make the bread dry. Now turn the mixer for about 15 minutes, then if it is still sticky, add the remaining flour, half a cup at a time until your dough is just right. It is kneading, as much as the flour, which relieves the stickiness and makes it smooth and springy to the touch; better too little, rather than too much flour. About 20 or 30 minutes is usually sufficient for this kneading in the mixer, then cover and set in a warm place. Now this does not mean hot, nor in hot water, nor on a radiator where you would get uneven temperature, but out of drafts, in a perfectly warm place. Let rise two hours or until it doubles its bulk, or breaks down and leaves a hole when you place your finger into it. Have your pans greased and warm (not hot), and divide the dough into two equal parts, shaping lightly into loaves, put into the pans and

cover with greased paper, setting in the same careful temperature to rise an hour or until it has doubled its bulk and the pan feels light. Now with all of this care, bread may be spoiled in baking if you do not understand your oven. Have a hot quick baking oven. Put in the bread when ready and bake for 15 minutes; it should just begin to have a delicate color. Now lower the temperature a little so that it is a steady, moderate heat and bake it for this sized loaf 45 minutes. Practice is the only sure success towards good bread making.

If you desire a stronger flavor to your bread, knead for ten minutes after the first raising and let rise again. This takes a little longer time than the first process. This will make two loaves of bread.

Mrs. Kirk's Card Index Cooking Recipes.

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Recipe 2.

GRAHAM BREAD.

DIRECTIONS.

Materials.	Measure.	Weight.
Milk	1 Cup	
Molasses	$\frac{3}{4}$ Cup	
Butter	2 Tablespoonfuls	
Yeast Cake	1 Cake	
Water (lukewarm) ..	$\frac{1}{2}$ Cup	
Salt	1 Teaspoonful	
Graham Flour	$2\frac{1}{2}$ Cups	
White Flour	$1\frac{1}{2}$ Cups	

Melt the butter in the scalded milk. Cool to lukewarm and add all the above ingredients, the yeast softened in the water. Beat thoroughly and set aside to become light; then turn into a long, narrow pan, and when again light bake about an hour in a moderate oven. Do not let the dough become too light after turning into the bread pans.

UTENSILS:

Stew Pan	Large White Bowl
Measuring Cup	Bread Pan

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Recipe 3.

GRAHAM AND DATE BREAD.

DIRECTIONS.

Materials.	Measure.	Weight.
Milk	1 Pint	
Porto Rico Molasses	$\frac{1}{3}$ Cup	
White Flour	$1\frac{1}{2}$ Cups	
Graham Flour	3 Cups	
Salt	1 Teaspoonful	
Compressed Yeast ..	$\frac{1}{2}$ Cake	
Lukewarm Water ..	$\frac{1}{4}$ Cup	
Dates	1 Cup	

UTENSILS:

Mread Mixer	Measuring Cup
Spatula	Measuring Spoon
Baking Pan	Knife
Bread Sieve	

Scald the milk. Remove from the fire, cool and add the molasses and salt. Pour into the bread mixer, and when lukewarm add the yeast dissolved in the warm water; sift in the white and graham flour, and beat well in the mixer. Set in a warm place to rise (about 68° Fahr.) until it doubles its bulk. Beat again and place in greased bread pans. Let rise, and bake in a moderate oven. For the date bread add the dates cut up in small pieces at the time of the second mixing or beating. Part

English walnuts and part dates may be used for this bread, which is very nice for school sandwiches. Bake one hour in a moderate oven. Remove from the pans and set on the bread sieve to cool without covering. This recipe will make two loaves.

All measurements level and flour sifted before measuring.

Recipe 4. DELICIOUS BROWN BREAD.

Materials.	Measure.	Weight.
Rye Meal	1½	Cups
Corn Meal	1½	Cups
Graham Flour	1	Cup
Salt	1	Teaspoonful
Soda	1	Teaspoonful
Best Porto Rico Molasses	1	Cup
Sour Milk or Buttermilk	3	Cups

DIRECTIONS.

Mix the meals and flour well together; dissolve the soda in a little boiling water, then add to the sour milk; pour in molasses; when all is well mixed add to the meal the salt and blend all together thoroughly. Pour into well-greased Boston Brown Bread molds, quart sizes, put on the cover and steam in a steam cooker three hours, uncover and bake twenty minutes. If you do not have the steam cooker, set into a kettle of boiling water to steam.

UTENSILS:

Two bowls — one large and one small	Two Bread Molds
Teaspoon	Measuring Cup
	Wooden Spoon

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Recipe 5. CORN BREAD.

Materials.	Measure.
Cornmeal	1 Cup
Flour	1 Cup
Gran. Sugar	⅓ Cup
Sour Cream	1 Cup
Eggs	2
Soda	½ Teaspoonful
Salt	½ Teaspoonful

DIRECTIONS.

Mix and sift all the ingredients together. Beat the eggs, add to the cream and pour gradually into the dry mixture; beat all well together, pour into the greased baking pan and bake in a moderate oven twenty to thirty minutes.

UTENSILS:

Baking Pan	Measuring Cup
Egg Beater	Measuring Spoon

Recipe 6. CLOVER LEAF ROLLS.

Materials.	Measure.
Milk	2 Cups
Butter	3 Tablespoonfuls
Sugar	2 Tablespoonfuls
Salt	1 Teaspoonful
Compressed Yeast ..	1 Cake
Flour	

DIRECTIONS.

Scald the milk in the stew pan and add the butter, sugar and salt to the milk. When lukewarm add the yeast cake dissolved in one-fourth cup of lukewarm water and gradually add about three cups of flour. Beat thoroughly, cover and let rise until light and full of bubbles. Cut down and add flour to make a stiff dough; knead and let rise again until it doubles its bulk, knead lightly and pinch off three small

UTENSILS:

Stew Pan	Measuring Cup
Muffin Pan	Tablespoon
Teaspoon	

rolls about the size of marbles; dip in melted butter and place them in the space for one muffin in a greased muffin pan. Repeat until the pans are full. Sprinkle lightly with granulated sugar. Cover, let rise and bake from 15 to 20 minutes in a hot oven. These are very nice for afternoon luncheons, inexpensive and very easy to make.

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Recipe 7.

GLUTEN BREAD.

Materials.	Measure.	Weight.
Boiled Water	2	Cups
Compressed Yeast .	$\frac{1}{2}$	Cake
Salt	$\frac{1}{2}$	Teaspoonful
Gluten Flour	$3\frac{1}{2}$	Cups

UTENSILS:

Bread Mixer	Bread Cooler
Two Baking Pans	Measuring Cup
Stew Pan	Measuring Spoon

DIRECTIONS.

Put the water into the stew pan and bring to the boiling point. Remove from the fire, pour into the bread mixer and cool to lukewarm. Dissolve the yeast in one-fourth cup of this water and pour into the mixer, then the flour and salt. Turn the mixer until the dough is kneaded thoroughly, 15 or 20 minutes, being very careful

not to have it too stiff. Set to rise in a warm place (about 75° Fahr.) to become light or double its bulk. Knead again for about 10 minutes, form into one loaf or two small ones, place in baking pans, cover with greased paper to exclude the air and let rise again until the loaves double in size. Bake 45 to 50 minutes in an oven not quite as hot as for ordinary white bread. When done remove to the bread cooler so the air can circulate all around it until cold. Keep in a dry place and not with other bread.

Gluten Bread may be made entirely of milk, the same proportion as water, and the white of one egg beaten lightly adding sufficient flour until it will drop, not pour, from the spoon. Put at once into bread pans until light and bake as in the above recipe. This bread is invaluable in all cases of diabetes, dyspepsia, obesity and rheumatism.

All measurements level. Flour sifted before measuring.

Recipe 8.

SOUR MILK GINGERBREAD.

Materials.	Measure.
Brown Sugar	$\frac{1}{2}$ Cup
Best Porto Rico Molasses	$\frac{1}{2}$ Cup
Butter	1 Tablespoonful
Cinnamon	$\frac{1}{2}$ Teaspoonful
Ginger	1 Teaspoonful
Sour Milk	1 Cup
Soda	1 Teaspoonful
Flour	$2\frac{1}{2}$ Cups

UTENSILS:

Stew Pan	Wooden Spoon
Measuring Cup	Measuring Spoon
Tablespoon	Shallow Baking Pan
Pastry Brush	

DIRECTIONS.

Put all the ingredients except the milk, soda and flour into a stew pan and stand on the back part of the stove where it will just slowly warm, and as it gradually heats, beat until foaming. Be sure and do not let it get hot. Remove from the fire, beat in the sour milk and the soda dissolved in a tablespoonful of boiling water. Gradually add the flour, beating well. Grease the shallow pan, pour in the batter and bake in a moderate oven until done. A few chopped nuts sprinkled over the top as it is put into the oven is a very

nice addition. Two squares of grated chocolate melted over hot water and added to this recipe will make a nice chocolate gingerbread.

Recipe 9.

ENGLISH MUFFINS.

Materials.	Measure.	Weight.
Milk	1 Pint	
Butter	3 Tablespoonfuls	
Yeast	1 Cake	
Salt	1 Teaspoonful	

DIRECTIONS.

Scald the milk and add the butter, when lukewarm add the compressed yeast dissolved in $\frac{1}{4}$ cup of warm water and salt. Put in sufficient flour to make a drop batter, beating very well, and let rise for two hours; heat and grease the dripping pan, also muffin rings, if you use them, placing the latter in the former and half filling

UTENSILS:

Stew Pan	Tablespoon
Measuring Cup	Muffin Rings or Pan

with the batter. Bake in a moderate oven thirty minutes until a nice brown. If you use muffin pans, heat and grease them also. These are extremely tasty, and very nice toasted and served very hot. If you do not have muffin rings use gem pans.

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Recipe 10.

POP-OVERS.

Materials.	Measure.
Pastry Flour	$\frac{1}{2}$ Pint
Milk	$\frac{1}{2}$ Pint
Salt	$\frac{1}{4}$ Teaspoonful
Eggs	2

DIRECTIONS.

Beat the eggs without separating, until well mixed, and light. Add the milk to the eggs. Into another bowl put the flour, add the salt and pour into it beating all the while milk and flour gradually together. Strain this batter through a sieve. Have well heated and buttered iron gem or pop-over pans. Fill two-thirds full with this batter and

UTENSILS:

1 Pop-over Pan	1 Wooden Spoon
1 Puree Sieve	1 Brush
2 Bowls	1 Measuring Cup

bake in a moderate oven forty to fifty minutes, or until perfectly light, as they will surely fall if not perfectly done. It is very important to heat the pop-over pans as the desired lightness must be secured by steady heat from the bottom at the very beginning of baking.

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Recipe 11.

CORN-MEAL GRIDDLE CAKES.

Materials.	Measure.
Sour Milk or Butter-milk	1 Cup
Corn Meal	$1\frac{1}{2}$ Cups
Flour	$\frac{1}{2}$ Cup
Salt	$\frac{1}{2}$ Teaspoonful
Soda	1 Teaspoonful
Eggs	2

DIRECTIONS.

Beat the eggs well in the bowl without separating, adding the milk with the soda dissolved in a table-spoonful of boiling water.

UTENSILS:

Steel Griddle	Teaspoon
Cake Turner	Tablespoon
Bowl	Egg Beater

Mix in the remaining ingredients and bake on hot steel griddle.

Recipe 12.

GRAHAM GEMS.

Materials.	Measure.
Milk	1 Pint
Salt	1 Level Teasp'ful
Melted Butter	2 Tablespoonfuls
Graham Flour	3 Cups sifted
Eggs	3
Baking Powder	2 Rounding Tea- spoonfuls

UTENSILS:

Egg Beater	Gem Pans
Measuring Cup	Teaspoon
Wooden Spoon	Two Bowls

DIRECTIONS.

Beat the yolks of the eggs and add them to the milk, then the butter and flour. Beat very hard. Beat the whites to a stiff froth and add these with the baking powder to the batter. Mix carefully and bake in gem pans in a quick oven thirty minutes. One cup of boiled rice and one-half cup of chopped dates may be added to this recipe and you will have a very nice change. In adding the rice use one-half cup less of flour.

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Recipe 13.

BUCKWHEAT CAKES.

Materials.	Measure.
Compressed Yeast ..	½ Cake
Salt	1 Teaspoonful
Melted Butter	1 Teaspoonful
Molasses	1 Tablespoonful
Water	2 Quarts
Buckwheat Flour ..	
Baking Soda	½ Teaspoonful

UTENSILS:

Steel Pancake	Measuring Cup
Griddle	Teaspoon
Pitcher	Tablespoon
Cake Turner	

DIRECTIONS.

Dissolve the yeast in one-half cup of lukewarm water, pouring it into the pitcher with two quarts of water the same temperature. Make a smooth batter, which will run from the spoon, from the best buckwheat flour, at the same time adding the salt. Beat well and let stand over night. In the morning take out a pint of the mixture and set to one side. Now put into the pitcher the remaining ingredients. Mix lightly all together and bake on a hot griddle.

If there is any left after baking add the pint to it which has been set to one side, and the night before using pour in a pint of lukewarm water, add the salt and sufficient flour to make the batter as previously directed, and proceed as before, except now add one-half teaspoonful of baking soda dissolved in a little boiling water and stirred in carefully just before baking. Always save out some batter the first thing in the morning for the next baking. If some white flour is desired simply lessen the quantity of buckwheat but these cakes eaten occasionally will cause no trouble.

Making the batter in this way may be continued for a week if kept in a cool place, then if any is left it should be thrown out and start fresh again.

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CAKES.

(Including Butter Cakes, Sponge Cakes, Layer Cakes, Loaf Cakes, Fruit Cakes, Cookies, Fillings and Icings.)

"The character of all work depends upon the intelligence of the person who performs it."

All measurements level unless otherwise stated. Flour sifted before measuring.

There are only two kinds of cakes—butter cakes and sponge cakes, and they must be considered separately as to the manner in which they are put together and in baking. All butter cakes are stirred or beaten; for all sponge cakes, a motion called "cut" or "fold in" is used. This refers to the manner in which the flour and sugar are put into the cake. One stroke too much in sponge or angel cakes only toughens them.

There are three things very necessary in cake making.

First—material, which should be the very best butter, freshest eggs, fine granulated cane sugar, pastry flour and pure cream of tartar baking powder.

Second—putting the materials properly together.

Creaming the butter, gradually adding the sugar and then alternating with whatever liquid is used and flour. Whites of eggs if used, beaten stiff, and then the baking powder. This is only a general principle and all depends upon the texture desired in the cakes.

Third—this is the most difficult task of all, and it is knowing how to manage the oven.

If I say "a moderate oven," that may mean one thing to me and another to you. The same is true of any other temperature and nine-tenths of the failures in cake making come through not understanding the proper relation of heat to the cake in the oven. Oven thermometers are coming into common use and will no doubt prove very helpful. There is no such thing as luck in cake baking. There must be accuracy in measurements with all the other qualifications named. Cake baking is a science. Science is exact knowledge. Know the very best ways of doing, follow your recipe accurately and with some knowledge of the laws of heat in the oven and success is assured.

Never remove a cake from the pan until perfectly cold.

Never use a greased pan.

Use the best cream of tartar baking powder.

See that all utensils and materials are ready for use before beginning your cake.

Use as few utensils as possible to insure good work.

Be neat and orderly in your work and do not scatter flour and spill materials.

A cake made with water instead of milk will be more tender and keep moist longer.

To be a successful cake-maker one should make cake often, at least once a week, until you have mastered the general principles involved in it and then good judgment and brains must be mixed with every cake to insure success.

Cakes without butter require a very moderate oven; in fact, start with barely a warm oven until raised to its full height; then increase slightly to brown.

Cakes with butter require a moderately hot oven.

Layer cakes are baked more quickly than loaf cakes.



(Photographed especially for this book.)

NO. 2. DISHES TO BE USED IN INFORMAL DINNER FOLLOWING TABLE
LAID FOR SOUP COURSE AS SHOWN IN NO. 1.

Note convenience and care in arrangement of the dishes to be used for the remainder of this dinner. It saves a great deal of time and anxiety to have every dish in readiness for use and, at the same time, this table should be as attractive as the dining table. For time saving this table may be drawn up close to the hostess where she may easily reach many things without rising from the dining table.

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All molasses cakes and gingerbreads require a moderate oven as they burn easily.

Steam fruit cakes, when possible, and finish half an hour in a moderate oven to brown.

The "one, two, three, four cake" used by our grandmothers is really the mother of all butter cakes used today, while the sponge cake is the foundation from which angel food and sunshine cakes are derived.

Certain proportions are used as guides in all butter cakes; there is less sugar than flour and less butter than sugar. Where no eggs are used more baking powder is necessary. For instance, one teaspoonful of baking powder is sufficient for each cup of flour if several eggs are used. Do not use too much baking powder as the cake is likely to be coarse grained and dry quickly.

It is not necessary to have so many recipes as it is to obtain changes in flavoring and filling.

Recipe 1.

LAYER CAKE.

Materials.	Measure.
Butter	$\frac{1}{2}$ Cup
Gran. Sugar	$1\frac{1}{2}$ Cups
Lukewarm Water ..	1 Cup
Pastry Flour	$2\frac{1}{2}$ Cups
Eggs	Whites of 4
Cream of Tartar....	2 Rounding Tea-
Baking Powder	spoonfuls

UTENSILS:

Two Bowls	Teaspoon
Wooden Spoon	Spatula
Egg Beater	Cake Pans
Measuring Cup	

DIRECTIONS.

Beat the butter to a cream, add the sugar slowly, beating both until creamy. Gradually add the water, then the flour in the same way. Beat thoroughly; then add the well-beaten whites of the eggs and the baking powder, folded in gently but quickly. Put at once in ungreased Van Deusen cake pans and bake twenty minutes in a quick oven. Invert the pan and let it remain until cool. Remove from the pans and put together with any de-

sired filling. Use the spatula to remove every particle of batter in the bowl.

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Recipe 2.

MAPLE SNOW CAKE.

Materials.	Measure.
Gran. Sugar	$1\frac{1}{2}$ Cups
Butter	$\frac{1}{2}$ Cup
Pastry Flour	$2\frac{3}{4}$ Cups
Lukewarm Water ..	1 Cup
Eggs	2
Baking Powder	4 Teaspoonfuls

UTENSILS:

One Long Cake Pan	Mixing Bowl
Wooden Spoon	Measuring Cup
Spatula	Flour Sieve
Egg Beater	

DIRECTIONS.

Put the butter into the mixing bowl and with wooden spoon beat until creamy, add gradually the sugar, then the yolks which have been beaten until thick and lemon colored. Measure the flour and put into the flour sifter, then measure the water and alternate in adding to the mixture. Beat this thoroughly and then cut and fold in the well-beaten whites of eggs and the baking powder. Bake in an oblong pan.

Filling.

Cook one pint of maple syrup and one-fourth cup of butter until it forms a soft ball when dropped in cold water. Just before the syrup is cooked enough add four tablespoonfuls of water to one-half pound of marshmallows and set them over the hot water. When they are melted beat them into the syrup mixture and continue until cool and stiff enough to remain on the cake. This should be soft and creamy and cut without cracking. Spread all over the cake and cover thickly with freshly grated cocoanut.

All measurements level unless otherwise stated.

Recipe 3.**MAY CAKES.**

Materials.	Measure.
Eggs	2
Sugar	$\frac{1}{2}$ Cup
Butter	$\frac{1}{4}$ Cup
Molasses	$\frac{1}{2}$ Cup
Sour Milk	$\frac{1}{2}$ Cup
Flour	$1\frac{1}{2}$ Cups
Cinnamon	1 Teaspoonful
Cloves	$\frac{1}{2}$ Teaspoonful
Nutmeg	
Raisins	$\frac{1}{2}$ Cup
Soda	1 Teaspoonful
Walnut Meats	

DIRECTIONS.

Beat the yolks of the eggs gradually beating in the sugar, butter softened and all the other ingredients. Dissolve the soda in a tablespoonful of boiling water, adding to the milk and then to the molasses. Fold in the well-beaten whites of the eggs, raisins and nuts; bake in small pans or gem pans; cover with boiled frosting and decorate with ribbons of chocolate icing.

UTENSILS:

Dover Egg Beater	Bowl
Teaspoon	Muffin Pans
Tablespoon	Food Chopper
Measuring Cup	

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Recipe 4.**FRUIT DROPS.**

Materials.	Measure.
Butter	1 Cup
Sugar	$1\frac{1}{2}$ Cups
Eggs	3
Soda	1 Teaspoonful
Hot Water	1 Tablespoonful
Flour	$3\frac{1}{4}$ Cups
Cinnamon	1 Teaspoonful
English Walnuts (chopped)	1 Cup
Currants	$\frac{1}{2}$ Cup
Seeded Raisins	$\frac{1}{2}$ Cup

UTENSILS:

Two Bowls	Tablespoon
Measuring Cup	Teaspoon
Wooden Spoon	

DIRECTIONS.

Cream the butter, add the sugar gradually and eggs well beaten, and the soda dissolved in the water. Then mix in half the flour with the cinnamon sifted in it.

Lastly add walnuts chopped, fruit and the remaining flour. Drop by teaspoonfuls at least one inch apart and bake in a moderate oven.

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Recipe 5.

TEA CAKES.

DIRECTIONS.

Materials.	Measure.
Butter	$\frac{1}{2}$ Cup
Sugar	1 Cup
Lukewarm Water or Milk	$\frac{1}{2}$ Cup
Flour	2 Cups
Eggs	2
Nutmeg	$\frac{1}{4}$ Teaspoonful
Baking Powder . . .	2 Teaspoonfuls

Materials.	Measure.
Two Bowls	Wooden Spoon
Teaspoon	Measuring Cup

UTENSILS:

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Beat the butter to a cream. Add gradually the sugar, then the milk or water, and the flour, now beating well. Add the eggs well beaten, nutmeg and baking powder. Bake in heart-shaped pans and ice with pink icing. Or, bake in gem pans and serve plain.

Recipe 6.

WHITE LOAF CAKE.

DIRECTIONS.

Materials.	Measure.
Butter	$\frac{3}{4}$ Cup
Pastry Flour	2 Cups
Gran. Sugar	$1\frac{1}{4}$ Cups
Whites of Eggs	6
Grated rind and juice of Lemon ..	$\frac{1}{2}$ Lemon
Soda	$\frac{1}{4}$ Teaspoonful

UTENSILS:

Mixing Bowl	Cake Pan
Wooden Spoon	Flour Sifter
Egg Beater	

Beat the butter to a cream, then gradually beat in the flour sifted two or three times with the soda. Beat the whites of eggs dry and gradually beat in the sugar. Now beat this a little at a time into the butter and flour mixture and at the last the lemon.

Line the bottom of the cake pan with buttered paper, grease the remainder of the pan, pour in the batter and bake in a steady but not too hot oven in the beginning, for about 45 minutes or until done.

Recipe 7.

AFTERNOON MARGUERITES.

DIRECTIONS.

Materials.	Measure.
Whites of Eggs.....	2
Sugar	1 Cup
Water	$\frac{1}{2}$ Cup
Vanilla	$\frac{1}{2}$ Teaspoonful
Chopped Nut Meats	1 Cup
Unsalted Wafers ..	
Raspberry Jam	

UTENSILS:

Stew Pan	Spatula
Flat Egg Beater	Dripping Pan

Boiled Icing.

Into the stew pan put the sugar and water, place over the fire and stir until dissolved. Boil it until it will spin a thread between the thumb and forefinger. Have ready the well-beaten whites of the eggs and pour this hot syrup slowly over them, beating all the while and so continue until cold. Add the vanilla, beat well again and it is ready for use. The following fillings may also be used for a change for Marguerites:

Fig Filling.

Boil one cup of chopped figs and one tablespoonful each of water and sugar until a paste. Spread between layer with cream filling on top. Add the other layer and cover with plain cream filling.

Nut Filling.

Chop one cup of pecans or English walnuts and add to half of the cream filling and between layers and the remaining filling on top. Decorate with halves of the nut meats.

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Recipe 8.**LEMON COOKIES.****Materials.**

Butter	1	Cup
Sugar	1½	Cups
Water	½	Cup, less the juice of 1 lemon

Eggs	2	
Baking Powder	2	Teaspoonfuls
Rind of Lemon (grated)		

UTENSILS:

Measuring Cup	Wooden Spoon
Lemon Squeezer	Moulding Board
Mixing Bowl	Rolling Pin
Egg Beater	Spatula

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DIRECTIONS.

Squeeze the lemon juice into a cup, and put in sufficient water to make the cup half full. Cream the butter and sugar, add the beaten eggs, mix well, add the water and other ingredients. Mix with flour as soft as can be rolled, sprinkle with sugar, cut and bake in a quick oven. A raisin, nut or cherry may be put in the center of each cookie.

Recipe 9.**FRUIT CAKE.****Materials.**

	Measure.	Weight.
Butter		1½ lbs.
Sugar		1½ lbs.
Eggs	12	
Currants		1½ lbs.
Raisins		1½ lbs.
Shelled Almonds ..		½ lb.
Citron		½ lb.
Candied Lemon and Orange Peel, each		½ lb.
Powdered Mace	¼	Saltsp'ful
Nutmeg	¼	Saltsp'ful
Fruit Juice	½	Pint
Flour		1½ lbs.
Candied Cherries ...		½ lb.

UTENSILS:

Large Mixing Bowl	Flour Sifter
Egg Beater	Food Chopper
Wooden Spoon	Measuring Cup
Pastry Brush	Cake Pans

DIRECTIONS.

Beat the butter until very creamy, then slowly add the sugar, beating all the time. Whip the whites until very stiff and mix with the sugar and butter. Beat the yolks for ten minutes as they must be very light and creamy. Add them to the mixture then gradually sift in the flour, beating well all the time, and as much as possible while adding all the remaining ingredients; the currants cleaned by washing and rubbing dry in a towel to get out all the little stems; buy the seeded raisins, put through the food chopper, also the almonds, citron, lemon and orange peel. Slice the candied cherries, and lastly add any kind of fruit juice, raspberry being especially nice. Line three long,

narrow cake pans with paper, butter well and divide the cake mixture, baking in a very slow oven three hours, or cover and steam for two hours and bake one and one-half hours; the latter makes a much more moist cake. This cake will keep indefinitely. This recipe will make 8¼ lbs. of fruit cake.

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Recipe 10.

LADY BALTIMORE CAKE.

Materials.	Measure.	Weight.
Sugar	2	Cups
Flour	3	Cups
Butter	$\frac{3}{8}$	Cup
Rich Milk	$\frac{1}{2}$	Cup
Eggs	5	
Cream of Tartar....	2	Teaspoonfuls
Soda	1	Teaspoonful
Filling		
Raisins	1	Cup
Citron	1	Piece
Small Cocoonut	1	
Blanched Almonds..		$\frac{1}{4}$ lb.
Boiled Icing		

UTENSILS:

Measuring Cup	Egg Beater
Measuring Spoon	Flour Sifter
Mixing Bowl	Four Layer Cake
Wooden Spoon	Pans

DIRECTIONS.

Cream the butter and gradually add half the sugar, beating the remaining sugar into the yolks of the eggs. Sift the cream of tartar and soda twice through the flour and gradually add this, alternating with the milk. Cut and fold in the whites of the eggs beaten stiff. Divide this mixture and flavor half with rose and into the other half is stirred one teaspoonful of vanilla, lemon or almond. Bake in four layers, two of white and two of spice. Make the boiled icing by Recipe No. 7 cake, and beat into it all the filling ingredients, raisins seeded and cut fine, citron shaved thin, and the almonds left to put on top of cake. Blanch the

almonds by letting them stand in cold water several hours. Remove the skins and put into an oven to dry. When the cakes are cool, spread the mixture thickly between them and finish the top one, which should be white, with powdered sugar sprinkled over it and the almonds stuck in end-wise. This is a genuine southern recipe but is not so considered if the top is frosted as is sometimes done.

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Recipe 11.

LEMON SPONGE CAKE.

Materials.	Measure.
Eggs	5
Sugar	$1\frac{1}{4}$ Cups
Juice and rind of one Lemon	
Flour	$1\frac{1}{4}$ Cups

UTENSILS:

Measuring Cup	Lemon Squeezer
Flat Wire Beater	Platter
Grater	Bowl
Cake Pan	

DIRECTIONS.

Beat the whites of the eggs until perfectly dry. Beat the yolks very light and gradually beat in the sugar and the grated rind and juice of the lemon, cut and fold in half of the whites, then half of the flour, and the remaining whites and flour. Bake in a Turk's Head pan fifty minutes. Cover with boiled frosting. Vary this cake by baking in an open mold and filling the center with sliced peaches,

pears or any desired fruits. Serve as a dessert with whipped cream piled high in the center of the peaches, and garnished with slices of peaches. Pass whipped cream with this dessert. This is very nice served at luncheon.

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Recipe 12.

GOLDEN LOAF SUGAR.

Materials.	Measure.
Egg Yolks	8
Gran. Sugar	1 1/4 Cups
Butter	2/3 Cup
Water	1/3 Cup
Milk	1/3 Cup
Pastry Flour	2 1/2 Cups
Cream of Tartar ...	1 Teaspoonful
Soda	1/2 Teaspoonful
Vanilla	1 Teaspoonful

UTENSILS:

Mixing Bowl	Slotted Wooden
Measuring Cup	Spoon
Cake Pan	Measuring Spoon
	Egg Beater

DIRECTIONS.

Cream the butter; gradually add the sugar; beat the yolks until light; add the cream of tartar and beat very light. Add this to the butter mixture and stir thoroughly. Now alternate with the milk, flour, water, and flavoring at the last. Bake in a moderate oven from 30 to 50 minutes.

Recipe 13.

EASY ANGEL CAKE.

Materials.	Measure.
Whites of Eggs....	1 Cup
Gran. Sugar	1 1/2 Cup
Flour	1 Cup
Cream of Tartar ...	1 Teaspoonful
Flavoring	1 Teaspoonful

UTENSILS:

Loaf Cake Pan	Measuring Cup
Measuring Spoon	Flour Sifter
Flat Wire Beater	Large Platter

DIRECTIONS.

Measure the flour and sift several times on a piece of paper; then in the same way the sugar. Break the whites of eggs into a cup and when full empty into a platter, beat until foamy, add cream of tartar and beat until stiff; gradually cut and fold in the sugar and flour. At this point be sure you do not beat nor stir but with your flat beater cut and fold as directed. When

the flour is nearly in add the flavoring. Pour into a new cake pan or one that has never been greased and bake in a very moderate oven from 25 to 30 minutes.

Recipe 14.

CREAM FILLING OR BOILED ICING.

Materials.	Measure.
Sugar	1 Cup
Water	1/2 Cup
Whites of Eggs ...	2
Lemon Juice	1 Teaspoonful

UTENSILS:

Saucepan	Tablespoon
Measuring Cup	Egg Beater
Teaspoon	

DIRECTIONS.

Put the sugar and water on the stove, stir until the sugar is dissolved. Boil until it will spin a thread. Have ready the well-beaten whites of the eggs and pour this hot syrup slowly over them, beating all the while, and so continue until cold. Add the lemon and flavoring; beat well again. Put between and on top of layers.

Recipe 15.

SUNSHINE CAKE.

Materials.	Measure.
Whites of Eggs 7	
Yolks of Eggs..... 5	
Gran. Sugar 1¼ Cups	
Cream of Tartar ... ½ Teaspoonful	

UTENSILS:

Two Bowls	Egg Beater
Measuring Cup	Measuring Spoon
Baking Pan	

DIRECTIONS.

Have all the material ready. Measure and sift the flour several times. Do the same with the sugar. Separate the eggs putting whites into one bowl and yolks into another; beat yolks light and stiff, beat whites until foamy. Add cream of tartar and beat very stiff. Cut and fold in the sugar and add the yolks and flavoring; now fold in the flour and pour into an angel cake pan and bake in a moderate oven 45 to 50 minutes.

Recipe 16.

MOCHA FILLING.

Materials.	Measure.
Butter 1	Tablespoonful
Black Coffee 2	Tablespoonfuls
Powdered Sugar ... 1½	Cups
Chopped Nuts ... ½	Cup
Yolks of Eggs 2	

UTENSILS:

Measuring Cup	Tablespoon
Small Wire Egg Beater	Food Chopper Bowl

DIRECTIONS.

Prepare the coffee as usual, except allow double the amount always for black coffee. Cool. Beat the butter to a cream, add the yolks and beat well, then the coffee and gradually the sugar, beating well all the while. Mix in the nuts, which are chopped medium fine. Now (Recipe 1, Cake). Or the nuts may be put into the layer cakes instead of the filling.

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Recipe 17.

MARSHMALLOW FILLING.

Materials.	Measure.	Weight.
Marshmallows		1 lb.
Water ¼	Cup	
Whites of Eggs 2		
Vanilla 1	Teaspoonful	
Lemon Juice 1	Teaspoonful	

UTENSILS:

Double Boiler	Teaspoon
Egg Beater	Measuring Cup
Bowl	Lemon Squeezer

DIRECTIONS.

Put half the marshmallows into a double boiler with the water over the fire until melted. Beat the whites of the eggs until very stiff and gradually pour over the marshmallows (melted). Flavor and put between the cake. The remaining half of marshmallows may be put into the oven until they swell but do not brown. Put them on top of the cake and pour boiled filling over them.

Recipe 18.**CREAM MAPLE FILLING.**

Materials.	Measure.
Maple Syrup	2 Cups
Cream	2 Tablespoonfuls
Vanilla	6 Drops

DIRECTIONS.

Cook the maple syrup until it is almost ready to "thread," then add the cream and bring to the boiling point. Beat very thoroughly until it begins to grow thick; add minced walnuts or hickory nut meats. This should be thin enough to run over the cake.

UTENSILS:

Saucepan	Food Chopper or
Measuring Cup	Chopping Bowl
Tablespoon	and Knife

Recipe 19.**CHOCOLATE ICING.**

Materials.	Measure.
Baker's Chocolate..	2 Squares
Milk	½ Cup
Butter	1 Teaspoonful
Vanilla	1 Teaspoonful
XXX Sugar	

DIRECTIONS.

Put chocolate and milk in a double boiler; when hot add butter; take from the fire and when perfectly cold add sufficient sugar for spreading; add vanilla.

UTENSILS:

Double Boiler	Teaspoon
Measuring Cup	Spatula or Knife

MEATS.

(Including Roasts, Steaks, Chops, Irish Stews, Poultry and Dressings.)

"Enough is as good as a feast."

"Most of the want and much of the misery in this world may trace its beginning to lack of early training in the fundamentals of self development, character building and thrift, using the world in its best sense."—*Good Housekeeping*.

(All Measurements Level.)

The people of this nation live under intense excitement and energy, and with this great mental activity which really seems necessary in this age, meats, at least in small quantities, should be used for quick results. We are living, however, in a vegetable period and not a meat period, or more correctly speaking, we are just coming into it.

Where one demands meat and another vegetables much depends largely upon the life they live. In a vegetable diet of the right sort followed with less rapid living there is nothing better.

Pork should never be used by anyone who desires the best of food, but there can be no laws laid down as to what one should or should not eat. Think for yourself, investigate and study the best authorities on the subject.

Find out the foods with the combinations best suited to your particular needs and manner of living and then live as near to this standard as possible.

In the ordinary family the greater part of the muscle building and repairing of waste tissues is probably furnished by meat. If all the women knew how to buy and cook the cheaper cuts of meat it would help to keep down the prices of the more expensive cuts, besides, giving the family a larger percentage of nutrition. Most cooking of meat has been too rapid. "Get a meal quickly" has been the housewife's cry. Yes, and empty your purse quickly at the same time, has been the result.

While it is true the better the piece of meat the better the result, as a general thing it is possible and desirable in the average family to save expense

where it may be done without serious loss. Wise buying and careful cooking applies particularly to meats. Good meat may be spoiled by poor cooking and, on the other hand, an inferior piece of meat can be made exceedingly palatable by knowing just how to cook it. All sorts of good appetizing dishes may be prepared from the so-called cheaper cuts of meats. Never drop meat from your bill of fare unless you can supply the proper elements to nourish and sustain the body through other foods.

The housekeeper who does her own marketing should know how to buy not only the cheaper cuts of meats but the better ones as well. This practical knowledge of marketing on the part of the housekeeper affects to a marked degree both the comfort and the expense book of the family. Intelligence and skill in buying are only secured by careful practice and the purchaser must not be afraid to ask questions or show her ignorance when necessary. Most men in the markets will be found courteous and helpful if you will only let your wants be known. If your meals are planned ahead, and they should be, more than a single day's orders may be purchased ahead. This saves time and energy as the meat is the basis upon which the remainder of the meal is planned.

Recipe 1.

ROAST BEEF.

To roast a piece of beef perfectly is no small art and yet so little has to be remembered to do it well.

The oven should be very hot.

Wipe the meat with a wet or damp cloth; place it in the baking pan, adding one teaspoonful of salt (not over the meat) and enough boiling water to keep the pan from burning. Sear well over the top. When this is done, lower the fire to a hot oven, dust the meat with pepper and baste often until done. This will require about twenty minutes to the pound, or longer if it is liked better done, although the best juices and sweetness of the meat are lost by over-cooking.

Two things must be kept clearly in mind and these are:—first, have the oven hot; second, when the meat should be basted, baste and let nothing interfere.

Another way is to have a covered roaster. Then the meat is put in dry and it is self-basting, which does away with much extra work.

Again, a roast may be placed in the baking attachment of the Fireless Cooker and with the soap stones heated and all covered closely with the hood, the roasting will be perfectly done without heat in the kitchen and the housewife free to do as she chooses.

Recipe 2.

ROAST BEEF.

Materials.	Weight.
Roast of Beef	5 or 6 lbs.
Salt	
Pepper	

DIRECTIONS.

Under all circumstances, whether you burn coal, wood or gas, heat the oven to a very hot temperature before putting in the roast. Select a good rib roast—two ribs make a very nice roast—of five or six pounds. This may be boned and rolled, the bones sent home with the meat to be used

UTENSILS:

Covered Baking Pan Basting Spoon
Long Handled Fork

for soups or gravies. If boned, it is rolled with a piece of suet and tied; this is a much better way than using skewers as they are in the way when carving and difficult to remove. There are two terms, "roasting" and "baking." The former is placing on the broiler over the pan, searing first one side and then the other and proceed as you would for steak, reducing the temperature and lowering the flame to finish, basting with the fat and allowing fifteen or twenty minutes to the pound.

For baking proceed just the same except place in a covered baking pan with sufficient hot water to keep from burning the pan and sear for fifteen minutes, then reduce the heat, add the salt to the pan, dredge the meat with a little pepper and finish as for roasting. Remember that slow cooking will add greatly to the flavor of pork but will destroy entirely the flavor of beef. If dry and tasteless it has been poorly cooked.

Recipe 3.**POT ROAST.**

Materials.	Measure.	Weight.
Beef		3½ lbs.
Suet		¼ lb.
Onion	1	
Boiling Water	1 Pint	
Salt		
Pepper		

DIRECTIONS.

Choose a thick cut of beef from the shoulder and wipe with a damp cloth. Have the kettle hot and put in the suet and rend the fat. Remove the scraps, add the onion sliced, and cook until a light brown. Remove these from the kettle and put in the meat; sear on one side, and then on the other. Turn once more and put the onions on the meat and add the boiling water.

UTENSILS:

Kettle	Measuring Cup
Meat Fork	

Cover and simmer slowly one hour; season with salt and pepper and continue to cook until done, an hour and a half or two hours. The secret of a pot roast is more in the cooking than in the meat, being sure not to let it boil at any time. Have sufficient liquid in the kettle for gravy which may be thickened with a tablespoonful of flour after the meat is removed to a platter. Pour the gravy over the whole and sprinkle with finely chopped parsley.

Potatoes may be cooked with this and half a pound of well-washed prunes may be added for flavor and served with the roast, or removed and pickled to be used as a relish.

Recipe 4.**IRISH STEW WITH DUMPLINGS.**

Put three ounces of suet into a kettle. When the fat is rendered out of it, remove the cracklings and slice one onion in the fat and cook until a nice brown. Have two pounds of lean meat from the round cut into two inch squares, to this meat add two tablespoonfuls of flour. Rub well together then throw into the hot fat and shake over a hot fire until nicely browned. Add one pint of stock or water; stir until boiling. Slice one carrot, add one bay leaf, 1 teaspoonful of kitchen bouquet, 1 teaspoonful of salt, and pepper to taste. Cook slowly for one hour and a half. Ten minutes before the meat is done add dumplings made as follows:

Dumplings.

- 1 pint of flour,
 1 rounding teaspoonful of baking powder,
 $\frac{1}{2}$ teaspoonful of salt,
 1 cup of milk.

Sift dry ingredients well together and add more or less milk so that batter will drop from the spoon. Drop by teaspoonful over the meat, cover—and keep covered—for ten minutes. Serve on a platter with meat in the center surrounded by the dumplings and the whole garnished with parsley.

Recipe 5. STEAK AND VEGETABLES EN CASSEROLE.

Materials.	Measure.	Weight.
Round Steak		2 lbs.
Turnip	1	
Carrot	1	
Potato	1	
Flour	2	Tablespoonfuls
Silver-Skinned Onions	$\frac{1}{2}$ Pint	
Celery Seed	$\frac{1}{4}$ Teaspoonful	
Chopped Parsley ...	2	Tablespoonfuls
Kitchen Bouquet ...	1	Teaspoonful
Salt	1	Teaspoonful
Boiling Stock or Water	$1\frac{1}{2}$ Pints	
Pepper		

UTENSILS:

Casserole Dish	Paring Knife
Steel Spider	Measuring Cup
Tablespoon	Vegetable Cutter

DIRECTIONS.

Peel the onions and cut the vegetables into fancy shapes or cubes. Put a thick layer of these into the bottom of the casserole dish. Put the spider over the fire. When very hot throw in the steak, cut in inch squares, and sear over very quickly, shaking the flour over the meat while searing. Put the meat over the vegetables and the remaining vegetables and seasoning over the top. Pour the boiling water or stock into the spider, stirring well from the bottom. Add kitchen bouquet and a little more flour if desired to make a very thin brown sauce—pour this over the whole; cover and bake in a very moderate oven one and one-half hours. Always serve in the dish in which it is cooked.

Recipe 6. TO BROIL STEAKS OR CHOPS WITH GAS.

Materials.	Measure.	Weight.
Porterhouse, Sirloin or Club Steak at least one and one-half inches thick..		
Butter		
Pepper		
Salt		

UTENSILS:

Broiling Pan or Oven	Fork
	Hot Platter

DIRECTIONS.

Light the oven at least five minutes before putting in the steak. See that the broiling pan and rack are in order. Put the steak on the broiler when perfectly hot and put as near the gas flame as possible without touching. As soon as the steak is seared all over draw out the pan, take a fork, stick it as near the edge as possible, turn and sear the other side. Turn once more, lower the pan about six inches from the burner, turn them down about half, and broil slowly five

inches from the burner, turn them down about half, and broil slowly five

minutes on each side. Have the serving platter thoroughly heated and a tablespoonful of butter melted to which you have added salt and pepper. Lift the steak carefully to the platter and baste with the butter and seasoning. Garnish with thin slices of lemon, parsley, tomatoes or watercress. A steak two inches thick requires twenty minutes for broiling; one and a half inches, fifteen minutes; and one inch, ten minutes.

Club or Delmonico steaks are nice for small families.

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Recipe 7.

PAN BROILED STEAK.

Materials,
Porterhouse, Sirloin
or Club Steaks...
English Mutton
Boston Chops, Loin
or French Lamb
Chops

Measure. Weight.

DIRECTIONS.

Place over the fire a steel spider and when very hot put in any of the above meats which have been prepared as for recipe for broiling by gas, and turn them as soon as seared. Sear and turn again and so continue for five minutes. Then lower the flame under the pan and broil slowly for five minutes more. This is for steak two inches thick. Be very careful that there is

UTENSILS:

Steel Spider Fork
Hot Platter

no frying. Turn all meats more often than when broiled under gas or it will be fried rather than broiled. Finish the same as the preceding recipe. The English Mutton and Boston Chops will require fifteen minutes, and the ordinary American chop ten minutes. In pan broiling be very careful they do not fry, as mutton is fatter than beef.

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Recipe 8.

LOIN OF VEAL.

Materials,
Loin of Veal
Salt
White Pepper

Measure. Weight.

1½ Teaspoonfuls

DIRECTIONS.

Use care in selecting veal that is not too young and "green." The flesh should be firm, rather pink, and good sized bones. Wipe the above loin with a damp cloth and place it in the baking pan; sprinkle with the pepper and put the salt in one corner of the pan with half a cup of boiling water.

UTENSILS:

Baking Pan Measuring Cup
Basting Spoon

Place in a very hot oven for about 15 minutes when it will be well seared. Reduce the temperature to moderate heat and bake slowly, basting often. The time required will be 20 minutes for each pound of veal. Any method of cooking requiring long slow cooking, such as stews, fricassees, casserole, fireless cooking, etc., is especially desirable for veal. If you use a covered

baking pan the basting is not necessary. The only object of the water is to keep the pan from burning and smoking until sufficient fat is obtained for basting.

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Recipe 9. HAM BAKED IN CIDER.

Materials.	Measure.	Weight.
Small Ham	1	
Cloves	$\frac{1}{4}$ Teaspoonful	
Pepper	$\frac{1}{4}$ Teaspoonful	
Cinnamon	$\frac{1}{2}$ Teaspoonful	
Celery Seed	$\frac{1}{2}$ Teaspoonful	
Chopped Onions ...	2 Teaspoonfuls	
Sweet Cider	$\frac{1}{2}$ Gallon	

UTENSILS:

Paring Knife	Vegetable Brush
Baking Pan	Baking Soda

DIRECTIONS.

Wash the ham thoroughly, rub well with baking soda and scrub with the vegetable brush. Rinse in cold water, trim neatly, and put into the baking pan skin side down. Mix in a cup all the seasonings and rub these well into the meat and sprinkle thickly with the chopped onion. Make a sheet by adding slowly one-half cup of water to one cup of flour; roll out in a sheet and cover the entire flesh of the ham,

tucking down close to the skin. Fill the pan two-thirds full of hot sweet cider. Stand it in the oven and bake four hours in a moderate oven, basting often. When done remove paste and skin, trim the meat from the end bone, and decorate with a quill of paper. Place on a hot platter fat side down, garnish with parsley and pickled beets cut in fancy shapes. This is very nice served with cider sauce. Many like the addition of a bottle of wine or champagne instead of cider. Serve with sweet potatoes, tomatoes, spinach, cold-slaw and apple sauce. Twenty-five minutes is the usual time to allow to a pound.

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Recipe 10. CROWN ROAST OF LAMB.

Materials.	Measure.	Weight.
Double Rack of Lamb	1	
Salt	$1\frac{1}{2}$ Teaspoonful	
White Pepper		
Mashed Potatoes ...	3 Pints	

UTENSILS:

Baking Pan	Measuring Cup
Casting Spoon	Measuring Spoon

DIRECTIONS.

Select two racks or ribs of lamb and your butcher will turn and fasten them together, on each side, with the bones about two inches long standing upright. Set this crown roast into the baking pan and sprinkle with the pepper; put the salt into the pan with half a cup of boiling water. Cover the bones with oiled paper or pieces of fat

pork and put into a very hot oven for 15 minutes. Lower the temperature so the roast does not burn and bake in all 45 minutes, basting often. Serve on a platter with the center filled with mashed or riced potatoes and sprinkle with finely chopped parsley on the top. Paper frills should be put on the

ends of the bones. This is also very nice stuffed with sausage when put into the oven. Then the potatoes are served in a separate dish.

Loin or ribs of pork may be used in the same manner, garnished with fried apples.

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Recipe 11.

CHICKEN FRICASSEE.

Materials.	Measure.	Weight.
Chicken		4 lbs.
Butter	2 Tablespoonfuls	
Flour	2 Tablespoonfuls	
Water	1 Pint	
Grated Onion	1 Tablespoonful	
Salt		
Pepper		
Parsley		

UTENSILS:

Steel Spider	Stew Pan
Tablespoon	Measuring Cup

DIRECTIONS.

Select a chicken which is tender; singe and disjoint. Put into a colander or frying basket and let the water run quickly over it. Wipe each piece dry. Put the butter into the spider and over not too hot a fire; dip the pieces in flour. Put into the spider to brown on both sides. Remove the chicken and add the flour; stir well. Add the water and seasonings. When boiling add the chicken. Cover and simmer gently for at least one hour or until tender.

This must be cooked slowly or you will have a tough and tasteless chicken. When ready to serve, arrange the chicken on a platter and strain the gravy over it. Garnish with triangles of toasted bread and parsley.

Recipe 12.

ROAST TURKEY WITH DRESSING.

Materials.	Measure.	Weight.
Turkey		10 lbs.
Bacon		
Butter		
Salt		
Pepper		

UTENSILS:

Covered Roasting Pan	Long H'dled Spoon
	Steel Skewers
Large Meat Fork	Oiled Paper

DIRECTIONS.

Select a plump turkey having smooth, dark legs and the cartilage at the end of the breastbone should be rather soft and pliable. Remove the hairs by holding the bird over an alcohol flame or twist a piece of paper up tightly and light it, holding turkey over this and changing the position often until every part is singed. Cut off the head and with a pointed knife

remove the pin feathers.

For most housekeepers it is better to have the turkey drawn (that is the intestines removed and tendons pulled out) by the butcher. Now all that remains to be done is to wring a cloth from cold water and wipe the bird both inside and out, or by holding it under the cold water faucet and letting the cold water run through; but do not let the fowl soak in cold water. Wipe dry. Truss by drawing the thighs close to the body and hold by

inserting a steel skewer from one middle joint through the body to the other. Cross the ends of the legs and tie securely with a string, covering quite well up with several thicknesses of oiled paper. Bend the wings so they fit closely to the body and then fasten both firmly with another skewer. Draw the neck skin well to the back and fasten in like manner. Brush well with melted butter and place in the roaster, breast down, laying strips of bacon over the back of turkey and dust well with flour. Cover the pan and place in a VERY hot oven for fifteen minutes. Gradually reduce the temperature until a moderate oven and then finish in a slow oven which will take about three hours. Add salt and pepper when half done and turn on its back. If you do not use a covered roaster put in sufficient water to keep pan from burning, then the turkey must be basted every fifteen minutes, watching carefully that it does not brown too fast; if it does, cover with several thicknesses of oiled or buttered paper.

Remove the string and skewers before serving. Garnish with parsley or celery tips.

The true flavor of the turkey is preserved when it is not stuffed with a dressing.

If it is desired, use three cups of grated white bread crumbs, one teaspoonful of grated onion, one-half cup of melted butter, one-half of finely chopped green pepper (sweet), one cup of chopped celery and one pint of well-washed and drained oysters and salt to taste. Mix together in the order given. If desired, a beaten egg or two may be added to this stuffing.

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Recipe 13.

ROAST DUCK AND GOOSE.

Materials.
Domestic or Wild
Ducks or Goose..
Stuffing
Salt
Pepper

Measure. Weight.

DIRECTIONS.

Singe the ducks and remove the pin feathers, wash and scrub in hot water (if a goose use hot soap suds) then draw as directed in the preceding recipe for turkey. Wash in cold water by holding under the faucet, wipe dry and truss. Place the ducks in the baking pan, preferably one with a rack in the bottom, and cover the breast with

UTENSILS:

Baking Pan Long Handled
Large Meat Fork Spoon

very thin slices of bacon or salt pork. Bake in a very hot oven fifteen minutes to every pound if wild ducks and little more than twice the time if domestic. Add half a cup of boiling water for each duck and baste every ten minutes. Serve onions and brussel sprouts or browned sweet potatoes, apple and celery salad or lettuce and orange salad.

Roast Goose.

Prepare same as for duck and rub the inside with salt and an onion cut in halves. Fill with prune stuffing and steam for two hours and bake one hour, basting every ten minutes.

Prune Dressing.

Cook one-half a pound of prunes by soaking over night and cooking slowly in a double boiler. Pare, quarter and core three large tart apples and add to the prunes which have been stoned and cut into pieces. Cook one-half cup of rice until tender, as in Recipe 1, under Vegetables. **Shell** and blanch a dozen chestnuts; boil until tender and cut in pieces; add to the above mixture with one-half cup of butter, one-half teaspoonful of paprika and a good pinch of cinnamon. Mix all well together and it is ready for use.

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MEAT SUBSTITUTES

and

Substantial Meals Without Meat.

(Including Menus Without Meat, Sandwiches and School Luncheons.)

And God said: "Behold, I have given you every green herb bearing seed which is upon the face of all the earth, and every tree yielding seed; to you it shall be for meat."

FOODS.**Two General Classes.**

First—Nitrogenous or flesh forming foods and necessary to repair the daily waste of tissue.

Second—Carbonaceous or heat producing foods and are the source of our strength and energy.

Flesh-formers—Meat, eggs, fish, milk, cheese, nuts, peas, oatmeal, rye, wheat, corn.

A perfect diet consists of a correct combination of common food materials, blended to suit the age, occupation, sex, and climate in which the individual lives.

SUBSTITUTES FOR MEAT.

Some vegetables are perfect substitutes for meats.

All the grains, such as whole wheat, rice, barley, oats, corn and nuts, also cheese, peas, beans, lintels, macaroni, raisins, figs and bananas are meat substitutes.

Other vegetables are important articles of diet, but they should not be made the basis of your dietary.

"NO MEAT" MENUS.

Breakfast—Eggs on toasted white bread, sliced tomatoes, brown bread and butter, coffee.

Luncheon—Hot chocolate, bread and butter, lettuce salad.

Dinner—Spinach soup, macaroni and cheese, cucumber salad, floating island, coffee.



(Photographed especially for this book.)

NO. 3. TABLE LAID FOR COFFEE AND DESSERT.

This represents the same table shown in No. 1 at close of dinner. The dessert spoon and after-dinner coffee spoon are at the right of the dessert plate which is brought in with the finger bowl on it and set down before each guest, the finger bowl being removed to the back and left of the plate. Then the dessert is brought in and passed or placed on the dessert plate, the water and claret glasses remaining during the entire meal. When dessert is finished the finger bowl is replaced on the plate ready for use. The tips of the fingers are dipped in the water and wiped on the napkin. Never put the napkin in the finger bowl. If necessary to wipe the lips, do this by wetting the finger tips, touching the lips and then wiping with the napkin.

The coffee percolator is convenient and sociable and adds very much to the final entertainment of the guests and is coming more and more into every-day use.

Breakfast—Blueberries and cream, steamed eggs, toast, coffee.

Luncheon—Cream cheese and pimento brown bread sandwiches, graham crackers, grape juice.

Dinner—Barley soup, lima beans, mashed potatoes, cabbage salad with mayonnaise, black coffee, cheese and wafers.

Breakfast—Breakfast food and cream, apple sauce, Graham gems, coffee.

Luncheon—Cheese souffle, milk biscuit, berries, tea.

Dinner—Puree of peas, croutons, walnuts, apple and celery salad (French Dressing), steamed rice pudding, coffee, cheese and wafers.

Mrs. Kirk's Card Index Cooking Recipes.

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Recipe 1.

BRESLAU OF MEAT.

Materials.		Measure.
Chopped Beef, Veal or Chicken	1	Pint
Stock	1	Gill
Butter	2	Tablespoonfuls
Fresh Bread Crumbs	$\frac{1}{2}$	Cup
Cream or Milk	$\frac{1}{2}$	Pint
Chopped Parsley ...	1	Tablespoonful
Eggs	3	Yolks
Worcestershire Sauce	1	Teaspoonful
Salt	1	Teaspoonful
Mushroom Catsup..	1	Teaspoonful
Nepaul Pepper	$\frac{1}{4}$	Teaspoonful
Kitchen Bouquet ...	$\frac{1}{2}$	Teaspoonful
Tomato Sauce		

UTENSILS:

Food Chopper	Dripping Pan
Bowl	Custard Cups
Measuring Cup	Egg Beater
Tablespoon	Teaspoon
Brush	

DIRECTIONS.

Beat the yolks and chop the parsley fine; then mix all the ingredients well together. Brush custard cups well with melted butter and press the mixture into them. Partly fill a baking pan with boiling water, stand the cups in it, and bake in a quick oven for thirty minutes. When done, turn them from the cups onto a heated dish, pour around Tomato Sauce, garnished with triangles or hearts of toasted bread and serve hot.

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Recipe 2.

PICNIC PATTIES.

Materials.		Measure.
Pastry		
Chopped Chicken or Veal	1	Cup
Butter	1	Tablespoonful
Flour	1	Tablespoonful
Meat Stock	$\frac{1}{2}$	Cup
Cream	$\frac{1}{2}$	Cup
Chopped Pimento ..		
Chopped Celery	1	Tablespoonful
Salt		

UTENSILS:

Patty Pans	Measuring Cup
Tablespoon	Sauce Pan

DIRECTIONS.

Line the patty pans with a rich pastry. Make a sauce of the butter, flour, stock and cream. Stir until it thickens and add all the remaining ingredients. Fill the patties with this. Cover with a top crust. Bake in a hot oven. These are suitable for home luncheons or picnics.

Recipe 3.

HAM SOUFFLE.

Materials.	Measure.
Fine Chopped Ham. 1	Pint
Milk 1	Pint
Fine white Bread	
Crumbs ½	Pint
Butter 2	Tablespoonfuls
Flour 2	Tablespoonfuls
Eggs 3	
Slice of Onion 1	
Paprika	

DIRECTIONS.

Melt the butter in the sauce pan and cook the onion in this without browning; add the flour, paprika and milk; let boil until it begins to thicken, then strain over the bread crumbs and ham. Mix thoroughly, at the same time stirring in the yolks of eggs and fold in the whites beaten dry. Turn into the buttered baking dish, set into a pan of hot water and bake in a moderate oven thirty to forty minutes. Strained tomatoes may take the place of the milk.

UTENSILS:

Tablespoon	Measuring Cup
Baking Dish	Food Chopper
Sieve	Sauce Pan

Recipe 4. THE REAL SPAGHETTI A LA ITALIANNE.

Materials.	Measure.
Salt Pork or Bacon 4	or 5 Slices
Tomato Paste 1	Tablespoonful
Onion 1	
Sweet Peppers 3	
Beef or Veal 6	Slices
Tomatoes 1	Can
Salt 2	Teaspoonfuls
Flour 1	Tablespoonful
Grated Cheese 1	Cup
Spaghetti	

DIRECTIONS.

Put the salt pork or bacon into the spider, and after the grease is thoroughly cooked out, discard the pieces of fat. Add the tomato paste to the grease and when softened, add the onions and peppers well chopped. Then to this add slices of beef or veal (or as many pieces as you have persons to serve). Let this simmer ten minutes, putting in the tomatoes and salt. Moisten the flour with a little water, use to thicken and let cook slowly on the back part of the stove, while pre-

UTENSILS:

Steel Spider	Tablespoon
Grater	Hot Serving Dish

paring the spaghetti which should be put into a kettle half full of boiling water, and boil rapidly from 15 to 25 minutes. Blanch in cold water. Have the hot dish in which you wish to serve in readiness, cover the bottom with the sauce, then some of the cheese and a generous helping of spaghetti reheated by setting the dish in boiling water; another layer of sauce and a fine sprinkling of cheese capped by a piece of the beef or veal, and you have a genuine dish of the "real thing."

Recipe 5. LENTEN EGGS ON CODFISH CAKES.

Materials.	Measure.
Chopped Salt Cod-fish	1 Cup
Diced Potatoes	2½ Cups
Butter	½ Tablespoonful
Pepper	
Eggs	6
Bacon	2 Slices
Vinegar	2 Tablespoonfuls
Onion, Grated	1 Teaspoonful

DIRECTIONS.

Cut or pick the codfish in small pieces, peel and dice the potatoes, allowing full measurement and put both into the stew pan in boiling water to boil. When the potatoes are tender, drain and mash all well together, add the well-beaten egg, a dash of pepper and the butter, beat up very nice and light. Take up by tablespoonfuls, mold into flat cakes, dip in fine bread crumbs, place a few at a time in your frying basket and dip in hot fat until a rich brown, drain on blotting or brown paper and arrange on a hot platter.

UTENSILS:

Stew Pan	Vegetable Knife
Measuring Cup	Tablespoon
Teaspoon	Frying Basket
Kettle	Egg Poacher
	Fry-pan

Poach six eggs in your egg poacher and lift carefully to the top of the codfish cakes. In the meantime have the bacon cut up very fine, throw into a fry-pan until the fat is out, add the onion, stir well, remove from the fire and quickly put in the vinegar and dip this over the eggs. Send at once to the table. This is a very nice breakfast or luncheon dish. This will make six or eight cakes.

All measurements level unless otherwise stated.

Recipe 6. BAKED BEANS.

Materials.	Measure.	Weight.
White Navy Beans..	1 Quart	
Salt Pork		½ lb.
Molasses	¼ Cup	
Tomato Sauce	1 Cup	
Salt	1 Teaspoonful	
Soda	¼ Teaspoonful	
Pepper	¼ Teaspoonful	

DIRECTIONS.

Wash and soak the beans over night in plenty of cold water. In the morning wash and put them into the kettle; cover with cold water and bring slowly to the boiling point. Add the soda when nearly boiling. Boil just a moment and turn into a colander and drain well. Return to the kettle and cover with freshly boiled water and simmer until upon lifting some of the beans on a spoon and blowing on them the skins crack. Now pour into the

UTENSILS:

Bean Pot	Measuring Cup
Stew Pan	Sharp Knife
Colander	

bean pot and bury the pork, which has been scored or the skin cut through in squares, in the beans. Mix the molasses and a quart of water from the beans together, pour this over, sprinkle with pepper, add a cup of tomato sauce if you like the flavor and cover with the rest of the water, reserving the remainder to use later over the beans if they bake dry. Bake in a moderate oven covered for six or eight hours. These should be perfect in shape and just moist. These may be done in the Fireless Cooker and browned in the oven for twenty minutes.

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Recipe 7. CHILDREN'S SCHOOL SANDWICHES AND LUNCHEONS.

"Over the hills and through the valleys
List to nature's wooing call,
Seek the field, the shore, the wildwood,
Summer comes with joys for all."

Of all the work a mother has to do for her children, none is more troublesome than putting up luncheons day after day with a due regard for variety and wholesomeness, and for the fickle and often unreasonable taste of the child. If one could only give chocolate layer cake or large cucumber pickles every day and nothing else, then, indeed, one might be sure the luncheon would be eaten and approved by the small gourmand; but when one has a maternal conscience such things must be dealt out infrequently, and bread and butter offered day by day—a diet to which most children are indifferent if not actively hostile.

How to "do up" a luncheon which shall be appetizing, wholesome, and varied day after day, when often the larder is bare of dainties, is indeed a subject for study. It may be done occasionally with comparative ease, since woman's wit is equal to severe strain, but for ten months a year and twenty days a month—that gives the most ingenious pause.

Sandwiches are to be considered first, because one begins with them every morning. A good plan is to have them of different kinds of bread, either of white and whole wheat each day, or perhaps better, of white one day, whole wheat the next, Boston brown bread the third, white again the fourth, and little baking-powder biscuit the fifth. Of course fresh baked bread will not do; it must be at least a day old, and should be very thin, with most of the crust cut off; not all by any means, but only the heavy edge.

Sandwich fillings are legion, many of them nourishing and good, and a little handbook of suggestions is a boon to mothers, because invention fails so often. These combinations will be found easily prepared and appetizing.

Meat Sandwiches.—Cold roast beef chopped and slightly salted, between slices of white bread. Chicken, cut very thin and salted; white bread. Boiled ham, chopped very fine, mixed with a very little dry mustard; brown bread. Roast veal, finely chopped, with a few olives mixed in; brown bread. One very thin layer of chopped ham and a slice of chicken; white bread. Corned beef shaved very thin; white bread.

Salad Sandwiches.—Lettuce leaves on white buttered bread, with a very little French dressing made by mixing a teaspoonful of oil with a few drops of lemon juice and a little salt. Chopped watercress on buttered bread, white or brown, with salt. Very thin slices of cucumber, with salt; white bread. Thin slices of tomato, drained of all pulp and seeds and wiped dry; salt. Nasturtium leaves, with French dressing or salt. Lettuce with a little cream cheese spread on it, and salt or lemon juice. Watercress and cream cheese. Celery, chopped very fine and mixed with either French dressing or a little mayonnaise, or merely with salt and lemon juice; whole-wheat bread. Chopped green peppers mixed with cream cheese.

Sweet Sandwiches.—Chopped dates, wet with a little cream; white bread. Orange marmalade; whole-wheat or white bread. Figs, chopped fine and wet with cream; whole-wheat bread. Figs and nuts, chopped together; white bread. Nuts and raisins, chopped together; whole-wheat bread. Candied ginger, chopped; white bread. Prunes, chopped with peanuts; white bread.

Other mixtures are these:

Hard-boiled eggs chopped and mixed with French dressing. Cream cheese, alone or mixed with chopped nuts; Boston brown bread. Baked beans seasoned with lemon juice, mashed to a paste; very thin white bread. Stewed oysters, chopped. Olives, chopped; white bread.

It is always best, if possible, to have two kinds of sandwiches, one of meat, eggs, or cream cheese, and the other of some sweet mixture, perhaps two of each. On the day the tiny biscuit are used there may be some thin slices of cold meat, with a couple of olives, for a change.

Never warm or melt the butter, but beat until soft and creamy. The fillings may be made from all meats, most vegetables, eggs, cheese and the use of mayonnaise. Sandwiches depend upon the seasonings and it is very essential to have these on hand so as to lend variety to the luncheons and outings. Season corned beef or chopped ham with mustard. Roast beef or boiled tongue with Harvey, Worcestershire sauce or horseradish. Lamb, with capers, tomato sauce, catsup or chopped mint. Chicken or veal with chopped celery or celery salt or chopped pimentos. (The latter are a sweet Spanish pepper put up in little cans for 12 or 15 cents and a great addition in most all cookery, particularly salads and sandwiches.) Fish with onion juice, parsley and chives.

Nuts, cheese, eggs, mayonnaise, celery, cress, cucumbers, tomatoes and olives combined with meat and any of these vegetables make delicious sandwiches.

When they have to stand any length of time after making before they are to be used, pack in a stone jar and cover with a cloth wrung out of cold water, and when ready to be packed for the lunch wrap in oiled paper, keeping different foods separated by pieces of cardboard, and salads packed in tightly fitting jars.

Recipe 8.

SALAD SANDWICHES.

Materials.

Tomatoes
American Cheese ..
Mayonnaise
Chives
Salt and Paprika ...
Chopped Peanuts ..
Bread
Butter

UTENSILS:

Sharp Bread Knife Shears
Spatula Chopping Bowl
Vegetable Knife Round Cutter

DIRECTIONS.

Cream the butter in the bowl. Cut the bread in round, thin slices. Butter. Have the tomatoes peeled and very cold; slice thin and lift up with the broad spatula on the bread; sprinkle with salt and paprika. Cut the cheese as thin as a wafer and have it round also. Lift this to the tomato, spread with mayonnaise, chopped chives and peanuts. Cover with another round of buttered bread. Press well together.

These may be changed to a most delicious salad by cutting the slices of tomatoes quite thick and seasoning with salt and paprika. Then cheese and mayonnaise, another slice of tomato with seasoning; cheese, mayonnaise, chives and chopped peanuts on top. Serve on lettuce.

Recipe 9.

HAM SANDWICHES.

Materials.	Measure.	Weight.
Cold Boiled or		
Baked Ham		1½ lb.
Cold Boiled Tongue		1¼ lb.
Cold Chicken		1¼ lb.
Hard Boiled Eggs... 4		
Soft Mustard	1 Teaspoonful	
Chopped Capers ...	1 Teaspoonful	
Salt and Paprika ...		
Mayonnaise		
Bread		
Butter		

DIRECTIONS.

Chop the meat fine, pound and mix well in a mortar. If you do not have a mortar and pestle, put the meat through the chopper two or three times and work well with the back of a spoon. Season with mustard, salt, paprika and capers; moisten well with mayonnaise; chop whites of eggs fine, add to this and mix all well together. Put the yolks of the hard boiled eggs through the vegetable press or sieve, season with salt and paprika and mix with sufficient mayonnaise to spread. Cream the butter as usual, cut thin slices of bread, spread with the creamed butter. On one slice spread the meat mixture,

UTENSILS:

Food Chopper	Mortar and Pestle
Sharp Knife	Scales
Stew Pan	Measuring Spoon
Spatula	Vegetable Press
Spoon	

on the other the egg mixture. Press well together, wrap in oiled paper and pack. Be sure these (and in fact all sandwiches) are moist. Anything but a dry sandwich.

If preferred, ham alone may be used with perfect results, either sliced or chopped and well seasoned. If lettuce is used with them shred it fine.

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Recipe 10.

CHICKEN SANDWICHES.

Materials.	Measure.	Weight.
Cold Chicken		
Celery		
Shredded Lettuce ..		
Nuts		
Mayonnaise		
Salt and Paprika ...		
Bread		
Butter		

DIRECTIONS.

Put any bits of cold chicken also the celery through the food chopper, using the fine cutter. Season well with salt and paprika and a dash of cayenne pepper. Now mix well with the mayonnaise, half of which is whipped cream. Spread thin slices of bread with crusts removed with plenty of creamed butter. Spread the lower slice with the chicken, mayonnaise and shredded lettuce, and the upper slice with the nuts.

UTENSILS:

Food Chopper	Sharp Knife
Spatula	Bowl
Spoon	Whip Churn

Press well together; pack in a jar covered well with a towel wrung out of cold water. Or, if preparing them for a picnic wrap them in oiled paper.

If a sliced chicken sandwich is desired cut the chicken as thin as pos-

sible, spread with the mayonnaise—a little shredded lettuce on top of that and put between buttered slices of bread, trimming the edges neatly.

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EGGS.

(Steamed, Deviled, Stuffed, Scrambled, Curried and Omelets.)

"We learn from mistakes, from experiences, even more than from success."

"The discovery of a new dish does more for the happiness of man than the discovery of a star."

(All measurements are level unless otherwise stated. Flour is sifted before measuring.)

The housekeeper who has given little or no thought to the composition of eggs has much to learn of this very nutritive food. While this food, the egg, is in common use and probably always will be, a little more thought should be given to the best ways of cooking it.

One of the simple things to remember in cooking is that the albumen in the egg coagulates at a high temperature; hence to have that soft creamy consistency, be careful of extremes in heat and too long a time over the fire.

Eggs for cakes and souffles should be separated and the whites and yolks beaten separately. The main thing in the white is the amount of air that is beaten into it. The white of the egg never acts chemically upon any of the ingredients with which it is mixed, but the membrane being tough it has the power of sustaining the air beaten into it; when carefully folded into the batter it sustains that lightness to the end, if carefully baked.

Hot or warm water makes a much more tender omelet than milk, and there is no reason for failure of these most toothsome articles if one is reasonably careful.

A good omelet pan is as necessary to success as good eggs. A good steel spider, smooth, and the right temperature will go a long way toward producing good results.

It is the practice which makes perfect, and if you fail, try again for, "The man, or woman, who never makes any mistakes in life never makes anything else."

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Recipe 1.

EGGS STEAMED.

Materials.	Measure.
Eggs	4
Boiling Water	2 Quarts

DIRECTIONS.

Put the eggs into the stew pan containing the boiling water and cover. If you use natural gas the entire plate becomes hot, so you had better set the pan entirely off the stove. Let stand ten minutes. The white will be of a

UTENSILS:

Large Stew Pan Egg Cups

creamy consistency, the yolk perfectly cooked, and altogether much more wholesome than the leathery white which is the result of rapid boiling. If you should add six eggs let stand fifteen minutes. One egg, one quart of boiling water, cover and let stand five minutes.

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Recipe 2.**POACHED EGGS.**

Materials.
Strictly Fresh Eggs
Salt and Pepper
Toast
Boiling Water
Butter

Measure. Weight.

DIRECTIONS.

Fill the egg poacher or spider with boiling water. Draw the poacher to one side of the stove where the water cannot possibly boil. Carefully break the eggs into the sections, cover and let stand three minutes or until the white is "set." Instead of covering you can dip the hot water over the eggs until they look pink. With your

UTENSILS:

Egg Poacher Spatula

spatula carefully loosen the egg and remove to a nicely browned and buttered piece of toast, cut round. Season with salt and a dash of paprika, garnish with a bit of parsley and you not only have an attractive dish but if carefully done a wholesome one as well.

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Recipe 3.**HAM AND EGGS.**

Materials.
Fresh Eggs 6
Large Slices of Ham

Measure. Weight.

DIRECTIONS.

Have the spider very hot. Put in the ham, sear and turn; sear and turn again. So continue until the fat on the ham is a golden brown. Draw the ham from the fire, cut the ham in six small pieces, and arrange on the platter. Break the eggs in the fat. Be sure it is not so hot as to bubble and

UTENSILS:

Steel Spider Fork
Hot Platter Spoon
Broad Pancake Turner or Spatula

splutter. With a spoon dip the fat over the egg until a white film forms on the yolk; remove to the slices of ham. Serve at once, garnished with cress and slices of lemon.

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Recipe 4.

LUNCHEON EGGS.

DIRECTIONS.

Materials.	Measure.
Tomato Sauce	½ Pint
Hard Boiled Eggs ..	3
Toast	
Parsley	
Cream	¼ Cup
Salt and Pepper	

UTENSILS:

Double Boiler	Tablespoon
Knife	Potato Ricer

Make a tomato sauce according to Recipe 1 in sauces. Chop the whites of the eggs very fine and add to this sauce with the cream, salt and pepper. Arrange four dainty slices of toast on a platter and pour over this sauce, forcing the yolks through the ricer or chopped very fine. Sprinkle this over the top. A little grated cheese may be added to the tomato sauce when

you have it. If there is too much acidity in the tomatoes which might make the sauce curdle, add just a pinch of soda.

Recipe 5.

DEVEILED EGGS.

DIRECTIONS.

Materials.	Measure.
Eggs	6
Ham	1 Tablespoonful
Pimento	½
Melted Butter	1 Tablespoonful
Salt and Paprika to taste	

UTENSILS:

Tablespoon	Stew Pan
Mixing Bowl	Wooden Bowl and Chopper

Put the eggs into warm water and bring to the boiling point which is 212 degrees. Lower to about 200 degrees and keep them there for thirty minutes. Put into cold water. Shell, cut into halves lengthwise and remove yolks; put them into the bowl, add melted butter, the pimento and ham chopped; add the other ingredients, re-fill the whites and fasten the corresponding halves together with toothpicks. Dip

first in egg and then in bread crumbs, repeat once more and fry in hot fat. Serve wrapped in tissue paper, the ends fringed and tied for picnics, or, put on hot platter and pour white sauce or Mexican sauce around when served at home.

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Recipe 6.

FRIED STUFFED EGGS.

DIRECTIONS.

Materials.	Measure.
Eggs	6
Melted Butter	3 Tablespoonfuls
Anchovies or Sardines	2 or 3
Vinegar	2 Teaspoonfuls
French Mustard	2 Teaspoonfuls
Salt	
Paprika	½ Teaspoonful

UTENSILS:

Sauce Pan	Tablespoon
Knife	Teaspoon
Kettle	Frying Basket

Hard boil the eggs as for Recipe 10, cut lengthwise and remove the yolks and mash, season with all the ingredients given, mixing well. Re-fill the whites, put two halves together, fastening with a toothpick. Roll in egg and bread crumbs and fry in a hot fat.

Recipe 7.

PLAIN OMELET.

Materials.	Measure.	Weight.
Eggs	4	
Warm Water	4	Tablespoonfuls
Lemon Juice	1	Teaspoonful
Butter	1	Tablespoonful
A little grating of Nutmeg		
Chopped Parsley ...	1	Tablespoonful
Salt	1	Teaspoonful

UTENSILS:

Flat Egg Beater	Steel Spider
Bowl	Spatula
Tablespoon	Hot Platter
Teaspoon	

DIRECTIONS.

Use a steel spider always for an omelet. Fry or frying pans are both too thin and the omelet would heat too quickly in the center. Put the butter into the spider and heat slowly. Break the eggs into the bowl and only beat sufficient to thoroughly mix the whites and yolks; add the water and seasonings except parsley. Draw the pan to the hottest part of the stove and when very hot, but the butter not browning, add the eggs all at once. Let set a moment and then with your spatula

loosen the omelet at the edge, allowing the thin portion or uncooked part to run under and so continue until the omelet is "set." Now sprinkle over the parsley finely chopped and with your spatula turn over one-third of the omelet, then fold once more as you turn it out. Serve at once. More failures are reported to me in omelets than in almost any other branch of cooking. Each and every detail must be carefully followed to insure success. The steel spider, perfectly smooth, is the first requisite, then do not beat the eggs too much, twelve or fifteen minute beats will usually do the work, and the butter, while hot, must not be brown and smoking. These directions carefully followed—not once but always—you cannot fail.

This omelet may be varied by chopping ham very fine—two tablespoonfuls when chopped—and adding just before folding. Then you have a ham omelet. Peas, tomatoes, oysters, bacon, red and green peppers, sweetbreads and grated cheese all lend variety to a plain omelet.

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Recipe 8.

EGGS SCRAMBLED WITH PIMENTOS.

Materials.	Measure.
Pimentos	1
Onion Juice	1
Chopped Parsley ...	1
Eggs	4

UTENSILS:

Sauce Pan	Wooden Spoon
Double Boiler	Tablespoon

DIRECTIONS.

Drain and chop the pimento fine. Add the onion juice, salt and parsley and simmer for two minutes. Scramble the eggs in the double boiler and when nearly finished add the pimentos and finish together.

Recipe 9.**BREAD OMELET.****DIRECTIONS.**

Materials.	Measure.
Butter	1 Tablespoonful
Bread, grated	½ Cup
Eggs	4
Salt	½ Teaspoonful
Paprika	
Sweet Green Pepper	
(small)	1

UTENSILS:

Steel Spider	Two Bowls
Egg Beater	Measuring Cup
Chopping Bowl and	Knife

Prepare the pan the same as for Plain Omelet. Soak the bread crumbs in just enough milk to soften. Beat the yolks of the eggs separately. Add to the yolks the seasonings and bread crumbs. Mix well, very gently fold in the well beaten whites and the pepper finely chopped. Pour into the spider, leave for a moment over the fire. Then cover and set over a very moderate heat for ten minutes. Cut nearly through the center, fold and turn on

to a hot platter, and serve at once. This omelet is very nice without the pepper although the tone of the pepper to those who like it is a great addition.

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Recipe 10.**CURRIED EGGS.****DIRECTIONS.**

Materials.	Measure.
Eggs	6
Onions	3
Butter	1 Tablespoonful
Bacon Fat	1 Tablespoonful
Curry Powder	1 Teaspoonful
Flour	1 Teaspoonful
Stock or Water	1 Cup
Rice	

UTENSILS:

Vegetable Knife	Tablespoon
Sauce Pan	Double Boiler

Put the eggs into boiling water and let cook just below the boiling point for thirty minutes. Put at once into cold water and when cool slice thin around a mound of rice on a hot chop plate. Have the onions peeled and sliced very thin and put with the fat into the double boiler. Cook until the onions are soft and yellow; now add all the remaining ingredients, stir until boiling and the desired thickness. Strain this curry sauce and serve at once. Garnish with sweet red peppers, cut in fancy shapes.

Recipe 11.**EGGS A LA SUISSE.****DIRECTIONS.**

Materials.	Measure.
Eggs	4
Parmesan Cheese ..	
Butter	2 Tablespoonfuls
Cream	
Chopped Parsley ...	
Salt and Pepper	
Toast	

UTENSILS:

Baking Dish	Chopping Bowl and
Tablespoon	Knife
	Toaster

Spread the butter in bits over the bottom of the baking dish, then a layer of cheese, then break the eggs. Salt and pepper, a little cream, then add another layer of cheese. Put into a moderate oven 10 minutes, or until the eggs are set. Garnish with parsley and serve hot.

Recipe 12.

EGGS AU GRATIN.

Materials.	Measure.
Eggs	4
Grated Cheese	
Salt	
Pepper	
Vinegar	1 Tablespoonful
Toast	

DIRECTIONS.

Have some boiling water in the spider with the vinegar and a little salt. Use an egg poacher if you have it; if not, break the eggs into the water; cook slowly until the eggs are set; lift out carefully and set on rounds of buttered toast. Sprinkle each egg with a little grated cheese, brown quickly in a hot oven and serve.

UTENSILS:

Egg Poacher	Broad Spatula
Steel Spider	

SAUCES.

(For Meats, Fish, Vegetables, Puddings and Frozen Desserts.)

"Sauces and soups are the fine art of cookery and the person who understands them must understand tastes and flavors and possess a trained palate."

(All measurements level. Flour sifted before measuring.)

It is considered a great art by a few cooks and housekeepers to make good sauces. Unfortunately, it is the few rather than the many who recognize this or really take the trouble to make sauces properly. They hurry over them and subject them to too much heat and consequently send to the table a thick, disagreeable paste, lumpy or thin and watery.

To make good sauces takes a little time, but it is quite worth while as gravies and sauces constitute the perfection of entrees; even for a simple hash it is very necessary to make them with care. When one becomes familiar with a basis for all sauces others are quickly and easily made.

Sauces are intended as an accompaniment to the meat, fish, vegetable or pudding with which they are served and should be in perfect harmony with it. They should never be so prominent in flavoring or served in such quantity as to lose sight of the main dish. Pale sauces and gravies are not desirable, and this can easily be remedied by always having a bottle of Kitchen Bouquet in the kitchen, and using it sparingly as so little is required to produce the required color and flavor. If you wish a white sauce, have it white; if a yellow one, yellow; and a brown sauce should be brown. Browned flour is also ex-

cellent for thickening and coloring and gives a fine flavor but double the given amount of flour when desired browned.

Serve a sauce as soon as possible after making as there is danger of separating.

If necessary to keep hot, set in a pan of hot water.

All sauces are made or derived from brown or white sauce and the flavoring makes the numerous changes. The basis for this is one rounding tablespoonful of butter, the same of flour and one-half pint of any desired liquid, such as stock, strained tomatoes, milk, cream, water, etc.

Certain sauces belong to some particular vegetable, meat, fish or dessert, such as brandy sauce with plum pudding, cranberry sauce with turkey, apple sauce with pork, mint sauce with lamb, and caper sauce with mutton.

A general principle in uniting material for sauces is, rub butter or fat and flour together, and soften with a little of the hot liquid which is heating in the double boiler; stir all together until it is the desired thickness. In this way the flour is most thoroughly cooked, besides more digestible than when cooked in the fat.

The main or standard seasonings are salt, pepper, paprika, onion, bay leaf, Worcestershire sauce, Tobasco sauce, mint, capers, and flavorings from meats, fish, stock or vegetables. The thickening may be flour, bread crumbs, yolks of eggs, arrowroot, cornstarch or vegetable puree.

There are many fruit sauces very nice for puddings and ice creams made from crushed fresh fruits and the juice and sugar cooked to any desired thickness.

Recipe 1.

WHITE SAUCE.

Materials.		Measure.
Butter	1	Rounding Table-spoonful
Flour	1	Rounding Table-spoonful
Milk	1	Cup
Salt	$\frac{1}{2}$	Teaspoonful
Pepper	$\frac{1}{4}$	Teaspoonful

DIRECTIONS.

Rub the butter and flour together in the double boiler. When smooth add the milk. Stir over the fire steadily until it thickens. Add the seasoning and it is ready for use. This is the basis of all sauces. One cup of strained tomatoes in place of milk or cream will make tomato sauce, adding a seasoning of bay leaf and onion when stewing the tomatoes. To make an egg sauce add four hard boiled eggs,

UTENSILS:

Double Boiler	Tablespoon
Measuring Cup	Teaspoon

the yolks put through the ricer and the whites chopped fine. This sauce is very nice to serve either with chicken or boiled salt cod. For a Butter Sauce substitute boiling water instead of the milk or cream, adding it slowly beating all the while.

Recipe 2.**HOLLANDAISE SAUCE.**

Materials.	Measure.
Butter 2	Rounding Table- spoonfuls
Flour 1	Rounding Table- spoonful
Grated Onion 1	Tablespoonful
Tarragon Vinegar or Lemon Juice 2	Tablespoonfuls
Yolks of Eggs 2	
Bay Leaf 1	
Boiling Water 1	Cup
Salt ½	Teaspoonful
White Pepper	

DIRECTIONS.

Put bay leaf, onion and vinegar over the fire in a small stew pan, bring to the boiling point and cool. Rub the butter and flour together in the double boiler and add gradually the water, stir until thickened and the flour cooked. Now add the vinegar strained. Remove from the fire and stir in the yolks of the eggs one at a time, stirring gently. Reheat just a moment; add salt and pepper; strain and serve at once. This is elegant for fish or used in many ways with vegetables, being especially nice with brussels sprouts, spinach and asparagus. This sauce should be served as soon as made.

UTENSILS:

Measuring Cup	Sauce Pan
Measuring Spoon	Double Boiler
Tablespoon	Small Sieve

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Recipe 3.**MUSHROOM SAUCE.**

Materials.	Measure.
Mushrooms 1	Can
Kitchen Bouquet ... ½	Teaspoonful
Sweet Green Pepper 1	
White Sauce	

DIRECTIONS.

Make according to recipe for White Sauce (See Recipe 1); add the kitchen bouquet and 1 can of mushrooms drained and rinsed in cold water; stand the double boiler over a slow fire for ten minutes. This is nice served with sweetbreads or warmed-over chicken.

UTENSILS:

Double Boiler	Tablespoon
Teaspoon	

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Recipe 4.**CHOCOLATE SAUCE FOR ICE CREAM.**

Materials.	Measure.
Chocolate 1	Square
Sugar 1	Cup
Boiling Water 1	Cup
Vanilla 1	Teaspoonful
Nuts, chopped ½	Cup

DIRECTIONS.

Melt the chocolate in the double boiler. Add the sugar and water. Stir while adding the water, so as to form a smooth, glossy mixture as it cooks. Keep adding the water and the sugar until all is used. Boil until thick as desired. Remove from the fire, add vanilla and nuts and serve at once.

UTENSILS:

Double Boiler	Measuring Cup
Tablespoon	Teaspoon

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Recipe 5.

LEMON SAUCE.

Materials.	Measure.
Flour	1 Tablespoonful
Boiling Water	1 Cup
Sugar	$\frac{1}{2}$ Cup
Egg	1
Vanilla	1 Teaspoonful
Lemon	$1\frac{1}{2}$ Teaspoonfuls

UTENSILS:

Double Boiler	Measuring Cup
Grater	Lemon Squeezer
Egg Beater	

DIRECTIONS.

Mix the flour and sugar well together in the double boiler and pour over quickly in the boiling water, all the time until it thickens. Remove from the fire and add the lemon juice and grated peel and pour while hot over the well-beaten egg. Mix well. This is nice sauce to serve over any hot puddings.

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Recipe 6.

HARD SAUCE.

Materials.	Measure.
Butter	$\frac{1}{2}$ Cup
Powdered Sugar ...	1 Cup
Vanilla	1 Teaspoonful
Brandy	1 Tablespoonful

UTENSILS:

Bowl	Small Flat Beater
Measuring Cup	Tablespoon
Teaspoon	

DIRECTIONS.

Wash the butter in cold water until it is elastic; put it into the bowl and heat to a cream. When light, gradually add the sugar beating all the while. Add vanilla and gradually the brandy. Put into an attractive dish to serve. Set on ice until wanted. Fresh strawberries are a nice addition to this, or a little grating of nutmeg

over the top. The brandy may be omitted by those who do not care to use it. If brandy is omitted add one teaspoonful of lemon juice.

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Recipe 7.

MINT SAUCE.

Materials.	Measure.
Gran. Sugar	2 Tablespoonfuls
Boiling Water	1 Tablespoonful
Chopped Mint	3 Tablespoonfuls
Olive Oil	1 Tablespoonful
Vinegar	$\frac{1}{2}$ Cup

UTENSILS:

Bowl	Measuring Cup
Tablespoon	

DIRECTIONS.

Dissolve the sugar in the boiling water and add the chopped mint, cover and set away for one hour. Then drop by drop add olive oil and vinegar. Mix well together and serve with fresh lamb. Finely chopped mint mixed with a glass of currant or green grape jelly is an agreeable change.

Recipe 8. CRANBERRY JELLY.

Materials.	Measure.
Cranberries	1 Quart
Water	½ Cup
Sugar	2 Cups
Tart Apples	2
Cinnamon	¼ Teaspoonful

DIRECTIONS.

Wash and pick over the cranberries, put into the stew pan with the water and apples quartered and cored. Cover, and when the cranberries are well "popped" open and the apples tender rub through a sieve or colander. Add the sugar, return to the fire, stir until the sugar is dissolved and bring only to the boiling point. Remove from the fire, flavor, turn into a mould or individual glasses and serve with roast turkey. The cinnamon and apples may be omitted if desired.

UTENSILS:

Paring Knife	Measuring Cup
Stew Pan	Measuring Spoon
Mould	Sieve

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Recipe 9. APPLE SAUCE.

Materials.	Measure.
Tart Apples	6
Sugar	
Butter	1 Teaspoonful
Nutmeg	

DIRECTIONS.

Wipe the apples, cut in quarters and core. Put into the sauce pan with half a cup of water; cover and cook until soft. Press through the colander, add the sugar and butter with a slight grating of nutmeg or cinnamon. Mix well and it is ready for use.

UTENSILS:

Sauce Pan	Colander
Wooden Spoon	Vegetable Paring Knife

SOUPS.

(Soup Stocks and Meat and Vegetable Soups.)

"Scientific cookery in the home, by the mistress or housekeeper, means the elevation of the human race."

(All measurements level unless otherwise stated. Flour sifted before measuring.)

Most soups are spoiled by making them in too much of a hurry, and cooking rapidly.

Retaining the flavor by slow cooking and by having a soup kettle with

a tightly fitting cover, made from granite or aluminum or any good ware which will not chip, is a necessity in making good soup.

Have it large enough to contain meat, bones and water, and room for skimming. When all is ready and in the kettle, place over the fire and bring slowly to the boiling point and skim. Now lower the flame if you use gas or set back on the stove to simmer. **Never boil soup as it makes it tasteless and cloudy.**

Very good soup stock is made from beef alone but it is improved in flavor when made from equal parts of beef and veal. Veal and chicken make a white stock and delicate in flavor; or, again, a stock from one-half of beef and one-quarter each of mutton and pork, liver and ham are used for flavor.

Americans are just beginning to learn the value of having soup stock always on hand to use for gravies, sauces, made-over dishes, etc., which has been much of the secret of taste and flavor in French and other foreign cooking.

Soups have been looked upon as a dish for the rich. They are for rich and poor alike.

Use the clear soups or those with vegetables for dinner.

The cream or heavy soups may be served to better advantage for luncheon or supper dishes and if we realized the value of soups we would have them on our regular bills of fare.

Soups, however, should not be gulped down or taken into the mouth and then swallowed, but held long enough to mix well with the saliva before entering the stomach.

A great variety of soups to suit individual tastes and occasions may be made with very little trouble, but learn first how to make a good soup stock as a basis for many good and wholesome soups.

Recipe 1.

SOUP STOCK.

Materials.	Measure.	Weight.
Shin of Beef		3 ½ lbs.
Water	2 Quarts	
Sugar	1 Tablespoonful	
Onion	1	
Cloves	6	
Bay Leaf	1	

UTENSILS:

Soup Kettle, porcelain lined or granite	Colander
	Puree Sieve
	Knife

DIRECTIONS.

Cut the meat from the bones. Put the sugar and half the onion sliced into the soup-kettle, stir until it browns and forms a caramel; then add the meat bones, and water. Cover and bring very slowly to the boiling point. Skim. Turn the fire low and let simmer two hours; then add the remaining half of onion into which you have stuck the cloves and bay leaf. Simmer another hour then strain through the

colander. Put the stock in a cold place over night. In the morning remove the fat, put back into the soup-kettle. Beat the white of an egg well with the crushed shell in a half cup of water. Stir this well into the stock. Bring to the boiling point. Boil hard three minutes, skim and strain through two thicknesses of cheese cloth. A teaspoonful of lemon juice may be added just before straining. This makes the stock clear and sparkling and it is the

foundation of innumerable dinner soups, such as noodle, vegetable, rice macaroni, etc.

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Recipe 2.

GOOD VEGETABLE SOUP.

Materials.	Measure.	Weight.
Soup Stock	1	Quart
Carrot	1	
Turnip	1	
Potato	1	
Tomato	1	
Barley	1	Tablespoonful
Parsley (chopped) ..	1	Tablespoonful
Celery Seed	¼	Teaspoonful
Salt, Pepper or Paprika		

UTENSILS:

Two Stew Pans	Small Knife
Vegetable Cutters	

DIRECTIONS.

Soak the barley two hours and then put into a stew pan over the fire, and simmer very gently one hour. Prepare the vegetables and cut in fancy shapes or dice. Put them over the fire covered with boiling water and cook until tender. Add the stock to the barley, and when hot the cooked vegetables with the tomato cut in tiny pieces, and all the remaining ingredients. Simmer very slowly ten or fifteen minutes and turn into a hot tureen. Additional seasoning and color may be obtained by the use of a few drops of Kitchen Bouquet.

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Recipe 3.

TOMATO SOUP WITH VEGETABLES.

Materials.	Measure.	Weight.
Tomatoes	1	Can
Carrot	1	
Stalks of Celery ...	3	
Onion	1	
Soup Stock or Water	1	Pint
Kitchen Bouquet ...	½	Teaspoonful
Butter	2	Tablespoonfuls
Flour	3	Tablespoonfuls
Salt	1	Teaspoonful
Bay Leaf	1	
Paprika		

UTENSILS:

Two Stew Pans	Measuring Cup
Tablespoon	Teaspoon
Knife	Steel Fry-pan
Sieve	

DIRECTIONS.

Add the stock and all the flavorings to the tomatoes; cover and simmer fifteen minutes. Cook the celery and carrot cut in small pieces in a separate sauce pan. Brown the flour in the fry-pan, add butter, and rub together until smooth. Now put in the tomato mixture and stir until boiling and put through a sieve. Drain the vegetables, when tender unite with the soup, re-heat and serve with croutons.

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Recipe 4.

CREAM OF TOMATO SOUP.

Materials.	Measure.	Weight.
Milk	1	Quart
Strained Canned Tomatoes	1	Pint
Bay Leaf	1	Large
Butter	1	Rounding Table-spoonful
Flour	2	Rounding Table-spoonfuls
Mace	1	Blade
Salt	1	Teaspoonful
Sugar	1	Teaspoonful
Soda	$\frac{1}{4}$	Teaspoonful
Parsley (chopped) ..	1	Tablespoonful
Pepper		

UTENSILS:

Double Boiler	Measuring Spoon
Tablespoon	Sieve
Soup Tureen	

DIRECTIONS.

Put the tomatoes into stew pan with the bay leaf and mace. Cover and simmer slowly fifteen minutes. Put the milk into a double boiler. Rub the butter and flour together adding a little of the hot milk until smooth. Pour into the milk, stirring all the while until it thickens. Strain the tomatoes into a soup tureen, add the sugar, soda, salt and pepper, then pour in the creamy mixture all at once, stirring very gently until well blended. Sprinkle the parsley over the top and serve at once. This soup should never be thick but of a light cream consistency. One-half the amount of tomatoes may be used if preferred.

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Recipe 5.

CREAM OF PEA SOUP.

Materials.	Measure.
Peas	$\frac{1}{2}$ Can
Milk	1 Pint
Flour	2 Tablespoonfuls
Butter	1 Tablespoonful
Salt and Pepper	
Parsley (chopped) ..	1 Teaspoonful
Slice of Onion	

UTENSILS:

Double Boiler	Colander
Measuring Cup	Tablespoon
Egg Beater	Fine Sieve

DIRECTIONS.

Open the can of peas fully an hour before using and empty at once from the can. Put the milk into the double boiler with the onion and rub the butter and flour together until smooth, with a little hot milk, and then pour it into the double boiler with the remaining milk, stirring all the time until it begins to thicken; now beat well with the egg beater until creamy, about five minutes. Press the peas, including liquid, through the colander

and put into the double boiler, beat again, season with salt and pepper, press through a fine sieve, add finely chopped parsley and serve with croutons, which are made by spreading slices of bread with butter and cutting in

squares; put into a pan under the toaster, watching carefully until a nice brown on both sides.

Recipe 6. CREAM OF ASPARAGUS SOUP.

Materials.	Measure.
Stalks of Asparagus	1½ Dozen
Onion	1 Slice
Boiling Water	2 Cups
Milk	4 Cups
Flour	2 Tablespoonfuls
Butter	2 Tablespoonfuls
Bay Leaf	1
Salt and Pepper ...	

DIRECTIONS.

Cut two inches from the tops of fresh asparagus and throw them into cold water. Cut all that is good of the remaining portion in small pieces and put into the stew pan with the given amount of boiling water. Cover and simmer gently half an hour. Press well through a colander. Turn this into the double boiler with the milk. Rub butter and flour together in the bowl, adding a little of the hot milk until it will pour like good cream. Stir this well into the milk mixture, and when

UTENSILS:

Stew Pan	Double Boiler
Measuring Cup	Tablespoon
Egg Beater	Bowl
Soup Tureen	

it begins to thicken beat well with the egg beater. While this is cooking, put the tips into a pan with the bay leaf, slice of onion, a little salt and boiling water and cook for ten or fifteen minutes, or until just tender. Drain. Have soup tureen hot, season and pour in the soup and place the asparagus tips on top, distributing them in each plate of soup. Be careful in cooking asparagus with milk, as an acid in the asparagus is apt to make it curdle.

Recipe 7. MOCK OYSTER SOUP.

Materials.	Measure.
Vegetable Oysters..	12 Stalks
Boiling Water	1 Quart
Milk	1 Pint
Onion	1 Slice
Butter	1 Tablespoonful
Flour	1 Tablespoonful
Salt	
Pepper	
Parsley	1 Sprig
Vinegar or Lemon Juice	1 Tablespoonful

DIRECTIONS.

Scrape the vegetable oysters and throw at once into cold water with the vinegar or lemon juice to prevent discoloring; cut thin slices; put these into the stew pan with the boiling water, onion and sprig of parsley; cook slowly thirty minutes or until tender. Put the milk into the double boiler, add the butter and flour rubbed together, stir until it is smooth and begins to thicken. When the vegetable oyster is done rub through the colander and pour into the double boiler, season and serve.

UTENSILS:

Stew Pan	Measuring Cup
Double Boiler	Tablespoon
Colander	

Recipe 8.

POP-CORN SOUP.

Materials.	Measure.
Ears of Corn	6
Onion	1 Slice
Butter	2 Tablespoonfuls
Salt	1 Teaspoonful
Milk	1 Quart
Bay Leaf	1
Flour	2 Tablespoonfuls
Pepper	
Pop-Corn	

DIRECTIONS.

Put the milk into the double boiler over the fire with the bay leaf and onion. Score each row of corn down the center with the sharp knife and add to the milk. Rub butter and flour together, moisten with a little of the hot soup, to make a paste, and turn into the milk; stir constantly about five minutes, or beat with egg beater. Serve with pop-corn instead of wafers.

UTENSILS:

Sharp Vegetable	Tablespoon
Knife	Double Boiler
Measuring Spoon	

VEGETABLES.

(Full directions for cooking all kinds of vegetables and retaining their delicate flavors.)

"We go on in the beaten path without profiting by the varieties to be found on every side."

(All measurements level unless otherwise stated. Flour sifted before measuring.)

Vegetables are divided into four groups:

1. Muscle Building or Nitrogenous.—These take the place of meat and are such as peas, beans, lentils, and nuts.

2. The Heat and Energy Producers.—These must be used in larger quantities than the muscle building foods. They are rice, white and sweet potatoes, white bread, macaroni, spaghetti, chestnuts and the cereals.

3. Fat Producers.—These include nuts and olives. This group is one not so largely used or considered. Many times used only as "extras" when we have company. This is a grave mistake.

4. The vegetables of this group are important as cleaners and are largely water, mineral water and fine flavoring. They include lettuce, radishes, cabbage, celery; in fact, all the green succulent vegetables come under this head and are used largely in salads.

All vegetables should be cooked in uncovered vessels in boiling water.

Vegetables growing above ground should have salt added to the water. Underground vegetables, such as turnips and beets, should be cooked in boiling, unsalted water.

Dry vegetables, such as old peas and beans should be soaked over night in cold water.

To freshen vegetables when wilted, soak an hour in cold water. Never add salt as it softens them; particularly is this true of cucumbers.

All vegetables must be thoroughly cleaned before using and nothing is better for this than a vegetable brush and a sharp pointed knife.

Many pages might be written on the food value of vegetable diet. It is

the one thing in cooking that requires care; it is the one thing that does not get it. There are general principles underlying all vegetable cooking which are easy for every housekeeper to understand, if her interest can be aroused to do it. As vegetables are generally cooked they are tasteless and there is no branch of cooking as carelessly done, both at home and in hotels and restaurants, as the cooking of vegetables.

Practically all the elements necessary for the building of the body are found in vegetables and with these are included nuts and fruits. Health and nutrition depend upon the right selection and combination of these. There is such a variety of vegetables to be had in every state. Combine with this their clean and wholesome qualities and it is a wonder we are such a meat eating nation. But vegetable cooking requires greater care than cooking meat. Careless and rapid cooking dissipates the flavor and then we have a tasteless article.

Vegetables should not be closely covered while cooking. They are full of volatile oils—some more than others—and if these with the gases generated by cooking are not allowed to pass off into steam the vegetables are dark and strong in flavor.

Our living, habits, and character are largely dependent upon what we eat and we must, to sustain life, eat every year about half a ton of cooked food. One can readily see that a large proportion of the health, comfort and happiness of the home comes from the dining room and kitchen. How important it is, then, that we and our daughters should be educated along the lines of cookery. The practical kind where they can apply their chemistry both in the kitchen and laundry if need be; their physiology in the selection and cooking of foods; their lessons in fine arts, in the harmony of foods. Never be at the mercy of your cook, but know these things yourself. If you do not you will have not only badly cooked foods but unfriendly combinations.

Recipe 1.

BOILED RICE.

DIRECTIONS.

Materials.	Measure.
Rice	½ Cup
Salt	½ Teaspoonful
Boiling Water	2 Quarts

UTENSILS:

One Large Stew Pan	Measuring Cup Colander
--------------------	---------------------------

Buy the best South Carolina whole rice and put the given amount into cold water, washing well. Repeat several times. Then cover with cold water and soak over night or for several hours. Have the stew pan ready with the boiling water, drain the rice, and add a little at a time so as not to stop

the rapid boiling. Let boil very rapidly for ten or fifteen minutes, or until a kernel is soft under pressure with a fork. Drain in a colander and hold under the cold water faucet, letting the cold water run slowly over it. This removes the starch and whitens the rice. Now sprinkle with salt and set the colander on a pie pan in a warm oven to dry, occasionally tossing the rice up and down. This is a fine substitute for potatoes at least twice a week and may be served with a little pitcher of melted butter or butter and sugar or a rich brown gravy.

Recipe 2.

RICE CROQUETTES.

DIRECTIONS.

Materials.	Measure.
Rice	1 Cup
Milk	4 Cups
Yolks of Eggs....	4
Chopped Parsley ..	1 Tablespoonful
Salt and Pepper	

UTENSILS:

Frying Basket	Measuring Cup
Kettle	Tablespoon
Egg Beater	Double Boiler

Wash the rice and put into the double boiler with the milk. Cook until all the milk has been absorbed by the rice. Add the beaten yolks, parsley, salt and pepper. Mix and cool. Shape in any desired form, roll in beaten egg and bread crumbs, set in the frying basket and dip into hot fat. These may be served with cream or tomato sauce. They may also be shaped like little nests and a nice bit of jelly put in them when ready to serve.

Recipe 3.

POTATOES O'BRIEN.

DIRECTIONS.

Materials.	Measure.
Chopped Potatoes ..	5
Sweet Green Pepper	½
Salt	
Butter	2 Tablespoonfuls
Chopped Parsley ...	1 Tablespoonful
Onion	1 Tablespoonful

UTENSILS:

Steel Spider	Tablespoon
Chopping Bowl and Knife	
Measuring Cup	

Peel and slice a medium-sized onion and remove the seeds from the pepper. Chop both fine, also parsley. Chop the potatoes and mix with the first mixture and salt. Put the butter into the steel spider—or half butter and half fryings; when hot add the potatoes. Smooth and when they brown stir them up. Do not cook them too fast. When done press to one side of the spider, brown and turn out on a hot platter to serve.

Recipe 4.

HASHED BROWN POTATOES.

DIRECTIONS.

Materials.	Measure.
Cold Boiled Potatoes	2
Salt	½ Teaspoonful
Pepper	
Cream	4 Tablespoonfuls
Butter	1 Tablespoonful

UTENSILS:

Steel Spider	Tablespoon
Measuring Spoon	Chopping Bowl and Knife

Chop the potatoes rather fine, add salt and pepper and the cream; put the butter into the spider; melt; add the potatoes, smooth down nicely, cover, cook a moment over the fire and push back on the stove where they will cook slowly 10 minutes. Turn out on a hot platter as you would an omelet.

Recipe 5.

POTATOES AU GRATIN.

DIRECTIONS.

Materials.	Measure.	Weight.
Potatoes (boiled)...	6	
Cream	1	Cup
Flour	1	Tablespoonful
Eggs	3	Yolks
Stock or Milk	1	Cup
Butter	2	Tablespoonfuls
Grated Cheese	6	Tablespoonfuls
Salt	1	Teaspoonful
Paprika	½	Teaspoonful
Sweet Pepper, red and green	1	of each

UTENSILS:

Fry-pan	Baking Dish
Bowl	Egg Beater
Potato Knife	

Rub butter and flour together until smooth in the fry-pan, add stock and cream and stir until it boils, take from the fire, add the yolks well beaten, cheese, and seasonings. Put a layer of this sauce in the bottom of a baking dish, sprinkle over this some of the peppers chopped fine, then a layer of the potatoes sliced, another layer of sauce and peppers, and so continue, having the last layer sauce; sprinkle bread crumbs over the top and a few small pieces of butter and bake in a quick oven until brown. Serve in the dish in which it was baked.

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Recipe 6.

LIMA BEANS.

DIRECTIONS.

Materials.	Measure.
Lima Beans	1 Can
Butter	2 Tablespoonfuls
Yolk of Eggs	2
Parsley	1 Tablespoonful
Lemon Juice	2 Tablespoonfuls
Kitchen Bouquet ..	½ Teaspoonful
Sprig of Mint	1

UTENSILS:

Stew Pan or Chafing Dish	
Teaspoon	Tablespoon

Choose the small lima beans. Open the can, drain, and rinse well with cold water. Put over the fire with just enough water to keep them from burning until well heated through. Beat the butter and eggs well together, adding the parsley finely chopped and all the remaining seasonings. Add the sauce carefully to the beans and when hot serve at once. Peas are very nice prepared in the same manner.

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Recipe 7.

PLAIN ASPARAGUS.

DIRECTIONS.

Materials.	Measure.
Asparagus	1 Bunch
Butter	2 Tablespoonfuls
Salt	1 Teaspoonful

UTENSILS:

Tablespoon	Teaspoon
Paring Knife	

Wash well a bunch of asparagus; cut off the very hard portion and tie in small bundles. Put them upright into a kettle of water, leaving the tips out of the water for the first fifteen minutes. Then cover with boiling water and cook until tender. Drain,

put into a dish and pour over the carefully melted butter. This may also be served on nice squares of toast arranged on a hot platter. Pour over a sauce made as follows:

Rub one tablespoonful of butter and one of flour well together in a stew pan; add one cup of cold milk and stir constantly until it reaches the boiling point. Add salt and pepper and strain over the asparagus and toast. An egg beaten into the sauce just as you remove it from the fire is a nice addition. Serve also with Hollandaise sauce for a change.

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Recipe 8. ASPARAGUS TIPS IN PATTIE CASES.

Materials.	Measure.
Pattie Cases	4
Asparagus Tips	2 Cups
Milk and Cream	1 Cup
Butter	1 Tablespoonful
Flour	1 Tablespoonful
Salt and Pepper	

UTENSILS:

Sauce Pan	Tablespoon
Measuring Cup	

DIRECTIONS.

Select fresh, tender asparagus and cut in inch length pieces down the stalk as far as tender. Throw into plenty of rapidly boiling water and boil until tender. Drain and save the water with the remaining stalks for soup the next day. Make a white sauce with the milk, cream, butter, flour and seasonings. Add the asparagus, mix carefully so as not to have the pieces

mashed. In the meantime have the pattie cases heating; fill, set on a small paper doily on a hot plate and serve at once.

Recipe 9. BAKED STUFFED TOMATOES.

Materials.	Measure.
Tomatoes	4
White Bread Crumbs	
Grated Onions	2 Tablespoonfuls
Egg	1
Salt and Paprika . . .	
Butter	
Chopped Parsley . . .	1 Tablespoonful

UTENSILS:

Vegetable Knife	Grater
Egg Beater	Baking Pan
Measuring Cup	

DIRECTIONS.

Choose medium-sized tomatoes of uniform size, wipe clean and cut at the blossom end. Scoop out the pulp and mix an equal quantity of bread crumbs, the chopped onion—less onion if you do not care for the flavor—seasoning and the egg beaten. Fill the tomatoes, put a piece of butter on top, sprinkle with bread crumbs and bake in a buttered pan with hot water just covering the bottom. Baste with melted butter mixed with a little water and bake in a moderately quick oven 15 to 20 minutes.

Recipe 10. SWEET POTATOES EN CASSEROLE.

Materials.	Measure.
Sweet Potatoes	6
Butter	
Sherry	2 Tablespoonfuls
Maple or Brown Sugar	2 Tablespoonfuls

UTENSILS:

Casserole	Vegetable Knife
Sauce Pan	Tablespoon

DIRECTIONS.

Select medium-sized potatoes of uniform size. Pare and cut in halves lengthwise, put into the sauce pan, cover with salted boiling water and boil five minutes. Drain. Melt the butter and pour into the casserole. Put in a layer of potatoes, sprinkle lightly with salt, bits of butter and plenty of grated maple or brown sugar.

Then another layer of potatoes and so continue until all are used. Add two tablespoonfuls of water and the same of sherry. Cover and set in a moderate oven to bake for twenty or thirty minutes. When done the potatoes should be moist with a little thick syrup in the dish. The sherry may be omitted if you do not use wines.

Recipe 11. GLAZED SWEET POTATOES.**DIRECTIONS.**

Materials.	Measure.
Sweet Potatoes	6
Gran. Sugar	½ Cup
Water	½ Cup
Butter	½ Tablespoonful

UTENSILS:

Sauce Pan	Baking Pan
Measuring Cup	

Wash and pare medium-sized potatoes, cut in halves lengthwise and throw at once into cold water. Have boiling salted water in the sauce pan; put in the potatoes and boil eight or ten minutes. Drain. Boil sugar, water and butter three minutes or until a syrup. Dip each piece of potato into this, put into the baking pan and bake 15 minutes. Baste them two or three times with the remaining syrup.

Recipe 12. MASHED TURNIPS.**DIRECTIONS.**

Materials.	Measure.
White Turnips	6
Butter	1 Tablespoon
Pepper	
Salt	
Cream	1 or 2 Tablesp'fuls

UTENSILS:

Stew Pan	Small Wooden Spoon
Potato Ricer or Wooden Potato Masher	

Select firm, white turnips or the ruta-baga, a large yellow variety. Wash and pare, cut in slices and throw into boiling salted water. Cook uncovered, just below the boiling point until tender. Drain and shake a moment over the fire until dry. Press through the potato ricer or mash and season with salt, pepper, butter and cream. Heap

in a vegetable dish with a dash of paprika on top and serve very hot with duck or mutton; also very nice with roast pork or spare-ribs.

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Recipe 13.

CREAMED CABBAGE.

DIRECTIONS.

Materials.	Measure.
Finely Cut Cabbage	1 Quart
Butter	1 Tablespoonful
Egg	1
Cream	$\frac{1}{2}$ Cup
Vinegar	$\frac{1}{4}$ Cup
Pepper and Salt ...	

UTENSILS:

Sauce Pan	Tablespoon
Measuring Cup	Slaw Cutter

Cut hard white cabbage fine and stand in cold water for an hour; drain and place it in a covered kettle of boiling salted water for fifteen or twenty minutes. Drain and add the vinegar, salt and pepper and bring to the boiling point. Beat the egg with the cream, the melted butter and mix well with the cabbage. Let remain just a moment over the fire, remove to a hot dish and serve.

Recipe 14.

SOUR CREAM SLAW.

DIRECTIONS.

Materials.	Measure.
Head White Cabbage	
Vinegar	2 Tablespoonfuls
Eggs	2
Salt and Pepper ...	
Thick Sour Cream..	$\frac{1}{2}$ Cup
Sugar	1 Teaspoonful
Sweet Green Pepper	1

UTENSILS:

Slaw Cutter	Tablespoon
Measuring Cup	Teaspoon
Sauce Pan	

Select a firm, white head of cabbage and if a large one, one-half will be sufficient. Slice fine, cover with cold water for an hour, also the green pepper cut fine. Drain and rub in a towel until dry. Put the vinegar into the sauce pan and when hot add the eggs well beaten and mixed with the sour cream. Stir until it thickens. Remove from the fire and add seasonings. Mix cabbage with this and serve cold.

The eggs may be omitted and the remaining ingredients beaten in with a silver fork until it is light and foamy.

Recipe 15.

GREEN CORN.

Remove the coarse outside husks of good sweet corn. Loosen the fine husks next to the corn and roll it back so as to remove all the silk. Now roll back into place. Break or cut off the butt and put to boil in a kettle of

boiling water for five minutes. To be perfect the corn should be cooked as soon as possible after picking. One-third milk with the boiling water makes the corn white.

Recipe 16.

CORN FRITTERS.

DIRECTIONS.

Materials.	Measure.
Ears of Corn	6
Milk	1 Cup
Flour	1 Cup
Sugar	1 Teaspoonful
Baking Powder	1 Teaspoonful
Salt	

UTENSILS:

Measuring Cup	Kettle
Measuring Spoon	Bowl
Corn Slitter	Egg Beater
Tablespoon	

Take the corn and press out the pulp by running it over the corn slitter or score it with a very sharp knife. Add the yolks of the eggs and the remaining ingredients, the baking powder sifted with the flour. Beat well and stir in the well-beaten whites; fry in deep fat in the kettle, dropping a good-sized teaspoonful at a time. They should puff nice and round and are nice for lunch with maple syrup.

Recipe 17.

ESCALLOPED CORN.

DIRECTIONS.

Materials.	Measure
Canned Corn	$\frac{1}{2}$ Can
Milk	1 Cup
Butter	1 Tablespoonful
Bread Crumbs	1 Teacupful
Pepper	

UTENSILS:

Baking Dish	Measuring Cup
Grater	Measuring Spoon

Butter the baking dish and put a layer of corn in the bottom of the dish, then a layer of grated white bread crumbs, salt and a little pepper; repeat until all is used. Dot the bits of butter over it and pour the milk over the whole. Bake in a quick oven about twenty minutes.

Recipe 18.

TOMATOES STUFFED WITH CORN.

DIRECTIONS.

Materials.	Measure.
Tomatoes (medium) 4	
Green or Canned Corn	
Melted Butter	2 Tablespoonfuls
Cream	2 Tablespoonfuls
Salt and Pepper	

UTENSILS:

Baking Pan	Vegetable Knife
Tablespoon	

Use sufficient left-over corn from a previous meal or canned corn to fill the scooped out tomatoes from the stem ends of which you have cut off a slice or cap. Mix all the seasonings with the corn before filling. Put on the caps and stand them in the buttered baking pan in a hot oven for half an hour. Serve as one hot vegetable dish for dinner. Tomatoes are also nice

broiled or fried, either green or ripe. They must be cut rather thick, rolled in egg and bread crumbs and then fried, browning on both sides.

Recipe 19. CARROTS A LA HOLLANDAISE.

Materials.	Measure.
Carrots	2
White Turnips	4
Parsley	
Hollandaise Sauce..	

UTENSILS:

Potato Scoop	Two Stew Pans
--------------	---------------

DIRECTIONS.

Clean, scrape the carrots and cut in dice. Throw them into boiling water and cook slowly until tender. Pare the turnips, cut a slice from the stem, scoop out the center, leaving a cup. Put into plenty of unsalted boiling water and simmer until tender. When tender lift the turnips from the water and drain. Drain the carrots, mix with

the Hollandaise Sauce. Fill these in the turnip cups, garnish with parsley and serve. Carrots are very nice cooked with peas; or cook plain and season with one tablespoonful of butter, one of flour and a teaspoonful of Kitchen Bouquet.

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Recipe 20. TOMATOES ON TOAST.

Materials.	Measure.
Tomatoes	3
Chopped Parsley ...	
Cream	$\frac{1}{2}$ Cup
Milk	$\frac{1}{2}$ Cup
Flour	1 Tablespoonful
Pepper and Salt ...	
Toast	
Butter	1 Tablespoonful
Grated Onion	1 Teaspoonful

UTENSILS:

Baking Dish	Tablespoon
Measuring Cup	Toaster
Vegetable Knife	

DIRECTIONS.

Wash and cut the tomatoes in halves crosswise; set in a buttered baking pan, sprinkle with salt, pepper and a little finely chopped parsley; put a little piece of butter on the top of each and bake in a moderate oven about half an hour. Do not bake too long or they will fall to pieces. Have the toast ready, carefully lift one-half tomato to each piece. Make the sauce with the remaining butter, milk and cream, onion juice, salt and pepper in the baking pan and pour this over the tomatoes and toast. This is nice for breakfast, luncheon or supper.

Recipe 21.

ESCALLOPED TOMATOES.

Materials.	Measure.
Tomatoes	6 or 8
Butter	1 Tablespoonful
Grated Onion	2 Tablespoonfuls
Bread	
Salt and Pepper ...	

UTENSILS:

Baking Dish	Tablespoon
Vegetable Knife	

DIRECTIONS.

Scald and peel the tomatoes and cut in slices, or if canned ones are used, one-half can will be necessary. Make croutons of the bread by buttering, cutting in half-inch squares and toasting. Butter the baking dish and put a layer of the bread croutons in the bottom, then a layer of tomatoes and a little of all the seasoning, then another layer

of bread, tomatoes, and so continue, having bread last on top, with bits of butter, and bake in a quick oven about half an hour.

Recipe 22.

TOMATOES DU BARRY.

Materials.	Measure.
Tomatoes	4
Butter	1 Large Tablesp'f'l
Salt	1 Teaspoonful
Onion Extract	4 Drops
Pepper	
Parsley	

UTENSILS:

Stew Pan	Tablespoon
Skimmer	Teaspoon
Knife	

DIRECTIONS.

Select smooth, small tomatoes, wash, put into the stew pan and cover with rapidly boiling water; add salt and keep boiling at a gallop for about ten minutes or until the tomatoes are tender, when pierced with a fork. Remove carefully with a skimmer to a hot platter. With a sharp pointed knife cut out the little hard stem and cut a horizontal and vertical gash across the top of each. Turn or roll

back for a little ways the outside skin and pour over and around the tomatoes, the butter and seasonings carefully melted by standing in hot water. Chop parsley very fine and sprinkle over the top of each tomato, and garnish the dish with nice bunches of parsley at each end.

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Recipe 23.

BOILED CUCUMBERS.

Select good sized cucumbers and pare them; cut in halves, scoop out the seeds, then cut each in two crosswise. Throw these into boiling salted water until tender, about thirty minutes; drain. Lift into a hot serving dish and pour over a white sauce, seasoned with grated onion and chopped parsley. Hollandaise Sauce is also good with these cucumbers.

Recipe 24.

STUFFED EGG PLANT.

Materials.	Measure.
Egg Plant	1
Stale White Bread	
Crumbs	1 Cup
English Walnuts ...	½ Cup
Butter.	1 Tablespoonful
Chopped Onion	1 Tablespoonful
Savory	¼ Teaspoonful
Salt	
Pepper	
Egg	1

UTENSILS:

Steel Spider	Chopping Bowl and
Grater	Knife
Tablespoon	Measuring Cup
Cup Egg Beater	Baking Pan
Sharp Knife	

DIRECTIONS.

Choose a full, dark purple egg plant. Cook in plenty of boiling water fifteen minutes. While boiling, shell and chop the nuts, grate the bread crumbs and chop the onion. When the egg plant has boiled the required time, remove from the kettle and cut cross-wise in halves, and with a pointed knife cut out the pulp about one-half inch from the outside; and with a spoon remove it from the shell. Chop this fine. Put the butter into the spider, melt, add the onion and cook it until it is yellow but not brown. Then add the egg plant and cook a moment, then the remaining ingredients—except the

egg—mixing all well together. When thoroughly heated remove from the fire and add the well-beaten egg. Stand the egg plant shells in a buttered pan and refill with this mixture, heaping well on the top and sprinkling with bread crumbs. Baste with melted butter and twice again while baking in a moderate oven three-quarters of an hour. This is a nice luncheon dish and a perfect substitute for meat.

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Recipe 25.

STUFFED SWEET PEPPERS.

Materials.	Measure.
Sweet Peppers	6
Cooked Meat	2 Cups
Onion	1
Butter	1 Tablespoonful
Parsley	1 Tablespoonful
Salt	1 Teaspoonful
Mushrooms	½ Cup
Bread Crumbs	¼ Cup
Water or Stock	1 Cup

UTENSILS:

Paring Knife	Measuring Cup
Meat Chopper	Tablespoon
Baking Pan	Teaspoon

DIRECTIONS.

Cut the peppers in halves, cross-wise, remove the seeds and cut off the stem, or leave them whole, save cutting off a cap. Chop the meat (this may be veal, chicken or lamb) fine, also the onion and mushrooms. Mix all the ingredients together except the stock or water; fill the peppers and stand in a pan and pour the hot stock or water around them, basting often. Bake slowly three-quarters of an hour. A nice luncheon dish.

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Recipe 26. SPINACH—BOILED AND CREAMED.

Materials.	Measure.
Spinach	$\frac{1}{2}$ Peck
Butter	2 Tablespoonfuls
Cream	$\frac{1}{4}$ Cup
Salt	1 Teaspoonful
Hard Boiled Eggs..	2
Pepper	
Triangles of Toast..	4

UTENSILS:

Measuring Cup	Large Pans
Kettle	Colander

DIRECTIONS.

Boiled Spinach.—Fill the large pan with lukewarm water and take each root of spinach and dip up and down in the water; throw into another pan of water and wash the same way. Trim off as much or as little of the root as you like. After the spinach has been well washed throw into a heated kettle, cover and stand over a very slow fire for a moment until the juices start. Uncover, salt, and cook in its own

juices about 20 minutes. Drain in a colander and serve hot. This may be chopped very fine if preferred.

Creamed Spinach.—Cook as above, drain and press out the water. Chop fine, return it to the sauce pan, add all the seasonings and stir over the fire until hot. Have the eggs quartered and toast ready. Press the spinach into a mold or dish, then turn out onto a serving dish. Garnish with the toast and eggs and serve. When the spinach is chopped fine it can be pressed through the pastry bag and tube, or if you have any left it can be molded in small cups and served as a salad with mayonnaise or French dressing.

SALADS AND SALAD DRESSINGS.

“Bestowed with lettuce and cool herbs.”

“Salads refresh without exciting, and make people younger.”

(All measurements level. Flour sifted before measuring.)

There was a time when it was quite necessary to educate people to eat salads. While this might not have been true in foreign countries it has been in our own. A salad is by no means a modern invention, as lettuce, cress and cucumbers were used by ancients for dinner salads, although the dressing was quite different. Nothing is more appetizing than a fresh green vegetable and French dressing. On account of expense and time simple salads should be studied.

The vegetable must be fresh to crispness, the simple dressing perfectly blended and all ingredients cold. It must appeal to the eye as well as to the stomach. To become an expert salad maker, one must have a good idea of color and form, a very keen sense of taste, and a desire as well in planning new combinations. Avoid too many mixtures and the materials used should be harmonious ones both as to color and proper food relations.

With lettuce, cress, endive, as the most common “greens” used in salads and with any simple dressing you have a perfect dinner salad.

Salads are not simply the “fashion” but they are in strict accordance with our well being and should find a place on every table at least once a day.

SALADS SERVED WITH FRENCH DRESSING.

Some Combinations.

Lettuce—Half a tomato, chopped cucumber and green pepper.

Lettuce—Cream cheese moulded with chopped pimentos and olives. Tomatoes with mint chopped fine in French dressing.

Lettuce—Moulded spinach and hard boiled eggs or beets.

Dandelion—Watercress and tomatoes cut into quarters or eighths.

Lettuce—English walnuts.

With any succulent green vegetable and French dressing you have—if well made and served—a perfect dinner salad.

These green or succulent vegetables contain the necessary salts for the blood; the lemon or vinegar, the acid; and the oil, a most wholesome and easily digested fat.

The amount of oil to be used in either the mayonnaise or French dressing depends upon the individual taste. One person may like more oil and less of the acid and vice versa, hence only general rules can be given for these dressings.

Recipe 1.

MAYONNAISE DRESSING.

DIRECTIONS.

Materials.		Measure.
Eggs	2	Yolks
Olive Oil	$\frac{1}{2}$	Pint
Lemon Juice	3	Tablespoonfuls
Salt	$\frac{1}{2}$	Teaspoonful
Paprika	$\frac{1}{4}$	Teaspoonful
Dash of Cayenne...		

UTENSILS:

Christy Mayonnaise Mixer	Glass Lemon Squeezer
Measuring Cup	Tablespoon
Teaspoon	

Put the mayonnaise mixer on ice. Separate the yolks very carefully and put into the bowl of the mixer. Turn the dasher until the yolk is slightly beaten. Then from the dropper add the oil a drop at a time, stirring steadily, until one dropperful has been used; then a little more at a time may be added until half the oil has been beaten into the egg. Now begin to alternate with the lemon juice and oil until all are well blended. Put in seasonings,

pour into a pint jar, screw on cover tightly and place in refrigerator where it will keep for two weeks. When ready to use it may be thinned with whipped cream or the white of an egg well beaten. Tarragon or plain vinegar may be used instead of the lemon juice if preferred. This should be made in five to eight minutes. A Dover egg beater may be used but it will take much longer.

Parsley Mayonnaise.

Chop and pound fine one tablespoonful of parsley, adding a few drops of lemon juice. To this add one cup of good thick mayonnaise and a tiny bit of the desired coloring from any good fruit coloring. Do not add any fruit coloring unless it is necessary as the coloring from the parsley is usually sufficient. If you do not happen to have lemon juice two or three drops of alcohol will start the juices and coloring.

Recipe 2.**FRENCH DRESSING.**

Materials.		Measure.
Olive Oil	6	Tablespoonfuls
Vinegar or Lemon Juice	2	Tablespoonfuls
Salt	1	Teaspoonful
Garlic	1	Clove
Paprika	$\frac{1}{4}$	Teaspoonful

DIRECTIONS.

Rub the bowl with the clove of garlic and add a piece of ice the size of a hickory nut. Put in salt and pepper, adding gradually the oil, stirring rapidly. When the salt is dissolved, add the vinegar, gradually—lemon juice or tarragon vinegar may be used. To vary this a teaspoonful of Worcestershire Sauce may be added, or a few drops of Kitchen Bouquet. Mint is

UTENSILS:

Bowl	Tablespoon
Teaspoon	

excellent chopped fine in French dressing over tomatoes, or a tablespoonful of chopped chives or chopped parsley.

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Recipe 3.**COOKED SALAD DRESSING.**

Materials.		Measure.
Sugar	4	Teaspoonfuls
Flour	2	Teaspoonfuls
Cayenne Pepper	...	
Salt	1	Teaspoonful
Mustard	$\frac{1}{4}$	Teaspoonful
Vinegar	$\frac{1}{2}$	Cup
Egg	1	
Butter		Size of Walnut

DIRECTIONS.

Mix all the dry ingredients together and slowly add the vinegar. Heat in the double boiler and while so doing, beat one egg very light, then pour the seasoned vinegar onto the egg with the butter. Set back over the hot water and cook until it thickens, stirring constantly. When cold, thin a little with sweet cream, beating well.

UTENSILS:

Double Boiler	Measuring Spoon
Egg Beater	Measuring Cup

Recipe 4.**POTATO SALAD.**

Materials.		Measure.
Potatoes	4	
Cucumber	1	
Small Onion	1	
Clove of Garlic	1	
Oil	6	Tablespoonfuls
Vinegar	3	Tablespoonfuls
Parsley	1	Tablespoonful
Salt	1	Teaspoonful
Mayonnaise Dressing	$\frac{1}{2}$	Cup

DIRECTIONS.

Boil the potatoes with the skins on. When done drain and shake near an open window to have them dry and white. Remove the skins and cut the potatoes in dice. Rub the salad bowl with the garlic. Chop the onion very fine or grate, and with the potato put it into the bowl and pour over French dressing made from the salt, pepper, oil and vinegar. Set this in a cool place for one hour. Have the cucumber pared and in ice water the same length of time. Then cut it in dice and add to the potatoes with the mayon-

UTENSILS:

Stew Pan	Potato Knife
Salad Bowl	Chopping Bowl and Knife

naise. Sprinkle with parsley chopped very fine. Garnish also with parsley or lettuce and beets cut in fancy shapes.

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Recipe 5.

THANKSGIVING SALAD.

DIRECTIONS.

Materials.	Measure.
Red Cabbage	1
White Cabbage	1
Mayonnaise or cooked salad dressing	
Sweet Green Peppers	2
Celery	
Small Pickles	2
Olives	2
Parsley	1 Tablespoonful
Chives	1 Tablespoonful

UTENSILS:

Sharp Vegetable Knife	Mayonnaise Mixer Chopping Bowl and Knife
Large Bowl	

Trim and wash the white cabbage, cut in quarters and slice very thin. Throw into ice water and let stand for two hours. Do the same with the celery, adding a slice of lemon to each. There should be one-half as much celery as cabbage. Trim and wash the head of red cabbage and carefully remove the center, turning the outside leaves out and down in as graceful lines as possible. Chop that which was taken from the center and put in ice water. Make the mayonnaise either with oil or a cooked dressing, but whichever is used, add to each pint a teaspoonful of mustard. When ready

to use, drain and dry the cabbage and celery in a towel; shred the peppers and mix white cabbage, celery and peppers well together with the mayonnaise dressing. Have draining the red cabbage, shell and fill with this mixture, leaving a well large enough to hold the red cabbage, which is mixed with a cup of the mayonnaise to which has been added the olives, pickles, parsley and chives chopped fine. Fill the well with this red mixture and garnish with spoonfuls topped with a whole caper. Set the whole on a plate covered with a doily with hearts of lettuce to be used each serving, and send to the table.

Recipe 6.

CHICKEN SALAD.

DIRECTIONS.

Materials.	Measure.
One Chicken	4½ Cups
Celery	
Mayonnaise	
Shelled Pecans	½ Cup
Hard Boiled Eggs..	
Parsley or Celery Tips	
Salt and Paprika ...	

UTENSILS:

Sharp Kitchen Shears	Sharp Knife Salad Bowl
Potato Ricer	

Select a good plump fowl, clean and disjoint and put on to cook in boiling water; boil five minutes and then simmer for two or three hours with one bay leaf, a dozen cloves and a small onion. Remove the skin and with the shears cut the meat in half-inch cubes or pieces and an equal amount of celery, the latter having stood in ice water and then wiped dry. Marinate with a French dressing (Recipe 2, under Salads). Just before

serving, drain, mix well with mayonnaise dressing (Recipe 1, under Salads), to which has been added one-third whipped cream. Now fold in the nuts without breaking. Pile in a salad dish, garnish with the hard boiled eggs forced through the potato ricer, alternating with rows of white and yellow of egg and capers, with here and there parsley or celery tips to finish the garnish. Lettuce may be used but it gives a much stiffer appearance.

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Recipe 7.

SALAD A LA KIRK.

Materials.	Measure.
Cucumber	1
Lettuce	
Tartar Sauce	½ Cup
Pimentos	
Parsley	
Capers	

UTENSILS:

Vegetable Slicer Sharp Knife

DIRECTIONS.

Have ready one-half cup of stiff mayonnaise, with the addition of four olives, one tablespoonful of chopped parsley, one teaspoonful of capers, two small gherkins all chopped fine and with one teaspoonful of grated onion added to the mayonnaise you will have Tartar sauce. Peel and slice the cucumber lengthwise and cut each half in

two, crosswise. Notch each end with the slicer and scoop out each center. Lay on a leaf of watercress.

Fill with Tartar sauce and lay diagonal finely cut strips of the pimentos across the top, placing between each strip at regular intervals a caper. If the lettuce is used a touch of parsley at each end of the cucumber brings out the necessary color.

Recipe 8.

MAY SALAD.

Materials.	Measure.
Potatoes	1 Pint
Fresh Shrimps	1 Pint
Stock	
Cucumber	
Hard Boiled Eggs..	
Mayonnaise	
Chopped Chives ...	1 Teaspoonful
Lemon	1
Parsley or Lettuce.	

UTENSILS:

Stew Pan Lattice Vegetable
Bowl Slicer
Measuring Cup Mayonnaise Mixer
Tablespoon

DIRECTIONS.

Pare and cut in dice sufficient potatoes to make a good large pint and pour over sufficient boiling stock or consommé and cook until tender; drain, marinate with French dressing and cool. Shell the shrimp and marinate in lemon juice for one hour. Unite the shrimps, after draining, with the potatoes and mix well with the mayonnaise. Heap in a mound on a glass dish, mask with mayonnaise and chives sprinkled over the top. Garnish with slices of the cucumber latticed, and fancy cuts of the hard boiled eggs, with parsley arranged at either end in large bunches.

Recipe 9.

JUNE 13th SALAD.

Materials.		Measure.
Lemon Jelly	1	Pint
Strawberries	1	Quart
Pineapple	1	Pint
Mayonnaise	$\frac{1}{2}$	Cup
Whipped Cream ...	$\frac{1}{2}$	Cup
Lettuce		

UTENSILS:

Open Mold	Lemon Squeezer
Colander	Measuring Cup
Cream Whip	

DIRECTIONS.

Make the lemon jelly from any good recipe in your cook book or from Mrs. Kirk's Card Index Cooking Recipes.

Wet the mold in cold water and brush very lightly with olive oil. Pour in the lemon jelly and set in the refrigerator to harden. Put the berries into the colander, wash and drain thoroughly. Stem the berries and set in

a cold place. Shred a fresh pineapple, drain well and chill. Whip the cream and mix carefully with the mayonnaise and then with a silver or wooden fork unite with the berries and pineapple. Turn the mold of lemon jelly onto a pretty dish, fill the center with the fruit mixture, garnish with the lettuce and heap strawberries around with spoonfuls of whipped cream, or cream mayonnaise. Serve at once. This may be served at the close of a luncheon with very thin bread and butter.

Recipe 10.

TOMATO JELLY.

Materials.		Measure.
Granulated Gelatine	$\frac{1}{2}$	Box
Cold Water	$\frac{1}{2}$	Cup
Tomatoes	$\frac{1}{2}$	Can
Celery	1	Stalk
Bay Leaves	2	
Onion	1	Slice
Salt	1	Teaspoonful
Lemon Juice	1	Tablespoonful
Tarragon Vinegar...	1	Tablespoonful
Paprika	$\frac{1}{2}$	Teaspoonful
Mayonnaise		

UTENSILS:

Measuring Cup	Stew Pan
Knife	Lemon Squeezer
Teaspoon	Tablespoon

DIRECTIONS.

Cover the gelatine with a half cup of cold water; soak half an hour. Put into a stew pan tomatoes, celery, bay leaves and onion. Bring to the boiling point and simmer gently fifteen minutes. Add the gelatine and strain through a fine sieve; put into this lemon juice, tarragon vinegar and paprika. Turn into a mold or molds and stand aside to harden. Serve on lettuce leaves with mayonnaise dressing.

Recipe 11.**TOMATO CROWN SALAD.**

Materials.	Measure.
Tomato Jelly (Recipe 10)	
Celery	1 Cup
Apples	1 Cup
Lemon	1
Cream	½ Cup
Mayonnaise	½ Cup
Nuts	
Capers	

UTENSILS:

Measuring Cup	Knife
Glass Salad Plate	Open Mold
Silver Fork	Shears

DIRECTIONS.

Make the tomato jelly recipe and pour into an open mold. Turn out on a round glass salad plate and garnish with the delicate green and white leaves of celery. Quarter, core and peel apples sufficient when cut in dice to make one cupful. Rub the quarters with sliced lemon to prevent discoloration. Cut with shears the same amount of tender white celery. Unite these two with one-half cup of mayonnaise (use lemon in making this) and one-half cup of cream, measure before whipping.

Mix gently all together with a silver fork and pour into the center of the jelly mold, heaping high, and garnish with nuts or capers. This is not only a very attractive salad, but a delicious one as well, and particularly suited for supper, luncheons and receptions.

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DESSERTS.

(Including Pies, Short Cakes, Tarts, Fruit Whips, Fruit Cups, Jellyed Fruits, Puddings, Ice Creams and Sherbets.)

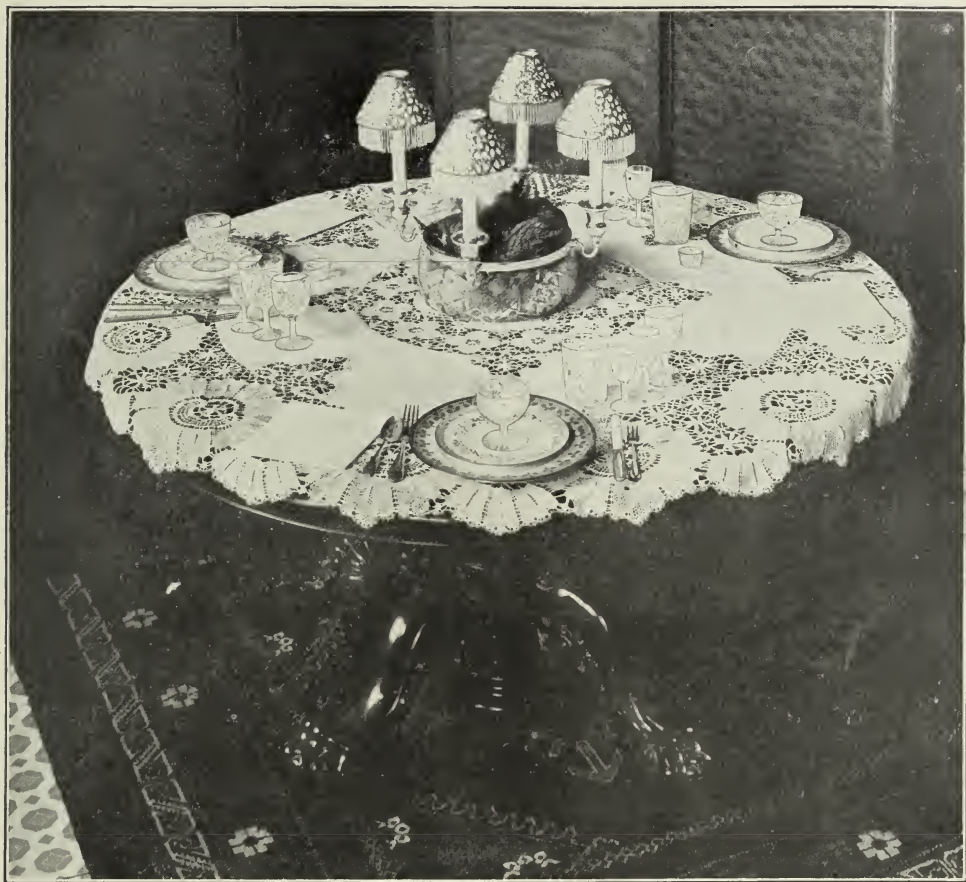
"And if the dish contentment brings,
You'll dine with me again."

(All measurements level. Flour sifted before measuring.)

In these days of correct and careful living the dessert is the smallest part of the meal. It is the final sweet at either lunch or dinner. But the success or failure of an entire dinner very largely rests upon the careful selection and preparation of this last course.

Heavy desserts should be avoided when the meat course has been particularly rich and heavy. Desserts should be planned that do not contain the same elements as found in the meat. For instance, in a roast pork dinner do not serve suet pudding, or in a boiled ham dinner do not serve mince pie, or in a roast beef dinner do not serve a custard rich in eggs, as in all of these your dinner will be unbalanced. Substitute the light whipped cream desserts, fruits or cheese and wafers.

With a vegetable dinner serve desserts rich in milk and eggs. It may all be summed up in a few words. A dessert must harmonize with the dinner. It is the beginning and the end which we remember and the dessert should be in perfect keeping with the food which has preceded it at the meal. Iced



(Photographed especially for this book.)

NO. 4. TABLE SET FOR A DINNER WHERE THE FIRST COURSE IS A
FRUIT COCKTAIL.

This is to be followed with a soup course or not as one chooses. The small plate holding the cocktail glass is on the regular ten-inch service plate which is to remain on the table for any other course which is to follow up to the regular meat course when it is to be removed and regular dinner plate brought in.

The knives, forks and spoons are arranged in their respective places. The fork to right of knife is the one to be used for the cocktail; or, if much juice is in the cocktail, a spoon should be substituted in place of fork, being laid in exactly the same place as the cocktail fork. All silver placed to the right of the meat knife is supposed to be used preceding the meat course.

Note the arrangement of the glasses: the water glass at the end of the knife blade; cordial glass next, which is taken at the beginning of the meal; the sherry glass next, which usually comes with the fish course and may be omitted if no fish is served; and the next is the claret glass which is to be used during the entire meal.

watermelon and very cold desserts should be indulged in very sparingly by most people when they follow a hearty dinner. Nothing, however, shows the extreme dainty cooking and thought as does the dessert. This is often prepared by the housekeeper's own hands and everyone is eager for new ways of preparing attractive and delicious dishes.

Many desserts may be made in the morning and set in a cool place and are ready for use when desired. Desserts to be moulded should receive careful attention to have perfect success. Wet the mold in cold water before using and when ready to remove, dip for an instant into hot water. Lay the dish you wish to serve it on over the mold, invert, and it will come out more easily than by wiping with a warm cloth as the heat is uniform on the mold and leaves no chance for it to stick.

Frozen desserts are very satisfactory when made at home and the growing popularity for many frozen desserts is due largely to the simplicity of the present make of ice cream freezers.

There are large ones and small ones and those specially nice for flat or small family use where the freezer can be set in the kitchen sink. Use an ice chipper and shave the ice into a pail, using one-third coarse rock salt and two-thirds ice and mix well together. Have the freezer can perfectly clean and cold. Put the cream mixture into it, adjust all the other parts and pack closely the ice and salt mixture around the can and over the top. Turn the crank steadily, but not too fast, until it is frozen to the desired consistency. Wipe the top of the can to prevent any salty water from getting into it. Remove the dasher, scrape off all the cream quickly, pack down evenly and re-cover, using a clean piece of muslin for this and a cork to put into the cover.

Pour off the water from the melted ice and re-pack with ice clear over the very top; cover with paper, burlap or carpet and stand aside two hours to ripen. The best ice creams are made only from a good quality of cream. Scald half of the cream with the sugar, cool and add the flavoring and the remaining cream and freeze. If fruits are to be used, mash and add after the cream is frozen.

Ices of all kinds should be frozen slowly. In making sherbets turn the freezer very rapidly and a meringue of the white of one egg and one tablespoonful of sugar may be added after it is frozen.

Recipe 1.

PLAIN PASTRY.

Materials.		Measure.
Pastry Flour	2	Cups
Lard	$\frac{1}{4}$	Cup
Butter	$\frac{1}{4}$	Cup
Salt	$\frac{1}{2}$	Teaspoonful
Sugar	1	Teaspoonful
Cold Water		

DIRECTIONS.

Have all materials cold, including the bowl in which the pastry is to be mixed. Measure the dry ingredients into the flour sifter and sift into the bowl. Measure the shortening and with the pastry cutter or knife cut this well into the flour. Do not put the hands into it, as the main thing in pastry is to keep it cold and it is the expansion of this cold air in the oven when baking that makes the pastry light and flaky. Add cold water a

UTENSILS:

Pastry Board	Rolling Pin
Flour Sifter	Measuring Cup
Bowl	Measuring Spoon
Pastry Cutter or Knife	

little at a time and as mixed push to one side; add more and do the same, until water has been added sufficient to take up the dryness and no more. Now bring all together in one mass, cover and set in a cold place two or three hours, if possible, as the crust is then much easier to handle and more flaky when baked. This recipe will answer for all pies.

Recipe 2.**RHUBARB PIE.****(Also Fresh Fruit Pies.)**

Materials.	Measure.
Rhubarb	2 Cups
Sugar	$\frac{3}{4}$ Cup
Egg	1
Flour	1 Tablespoonful
Lemon Juice	1 Tablespoonful
Butter	1 Teaspoonful

UTENSILS:

Measuring Cup	Pastry Board
Rolling Pin	Pie Pan
Teaspoon	Tablespoon
Bowl	Perforated Pie Tin

DIRECTIONS.

Select fresh, young rhubarb and do not peel it but wash and cut in small pieces. Mix flour and sugar well together, then the egg, lemon juice and the given amount of rhubarb. Have pastry made the day previous, roll and cover the pie pan. Pour in the rhubarb mixture, break the butter in bits over this; roll the upper crust; brush the lower edge with cold water, put on the cover, press the edges together and then loosen both from the edge of

the pan. Then with the expansion in the baking the edges stay together and no juices are lost. Brush over with cream and bake in a quick oven 35 minutes.

Cherry, currant and other fresh fruit pies may be made in this way.

Recipe 3.**CUSTARD PIE.**

Materials.	Measure.
Milk	2 Cups
Eggs	3
Sugar	4 Tablespoonfuls
Salt	1 Pinch
Nutmeg	

UTENSILS:

Egg Beater	Measuring Cup
Tablespoon	Bowl
Pie Pan	

DIRECTIONS.

Break the eggs into the bowl and beat without separating until light, gradually adding the sugar then the milk. Have the pastry on the pie pan and pour in the custard; grate some nutmeg over the top and bake in a moderate oven about 25 minutes. Try in the center with a teaspoon handle; if it comes out dry it is done. If it bakes too long or too fast it will be watery.

Recipe 4.

LEMON PIE.

Materials.	Measure.
Hot Water	1 Cup
Bread Crumbs, white and fine....	½ Cup
Sugar	½ Cup
Juice and Grated Rind of Lemon..	1
Eggs	2
Salt	Pinch

UTENSILS:

Egg Beater	Measuring Cup
Spoon	Bowl
Perforated Pie Pan	

DIRECTIONS.

Pour the hot water over the bread crumbs, add the salt, sugar, lemon, and yolks well beaten. Pour into pie crust and bake in not too hot an oven until done. Beat whites stiff and add two tablespoonfuls sugar and when the pie is cool pipe roughly over the top and brown in a cool oven, or the whites may be well beaten and mixed with the other ingredients and baked.

Recipe 5.

LEMON JELLY.

Materials.	Measure.
Gran. Gelatine	1 Box
Large Lemons	3
Boiling Water	1 Quart
Cold Water	1 Pint
Sugar	1 Cup

UTENSILS:

Two Bowls	Lemon Squeezer
Cheese Cloth	Mold
Grater	

DIRECTIONS.

Cover the gelatine with the cold water and when soft add the sugar, boiling water and the grated rind and juice of the lemons. Let stand until cool and strain through a double cheese cloth bag and turn into a mold. Serve plain, or with whipped cream and strawberries, bananas or other fresh fruit mixed carefully with the cream.

A bunch of grapes and other fruits

molded in the jelly, dates, figs (chopped) or nuts of all kinds, may be added to vary the dessert. Orange baskets partly filled with lemon jelly and set aside to harden and the remaining half of the jelly colored with a little fruit coloring molded and cut in cubes; again, make the lemon jelly and flavor a little of it with orange extract and color a delicate orange with fruit coloring. Select a fancy open mold and pour the orange jelly into the lower, fancy raised portion. Let set and add the remaining jelly. Turn out and fill the center with sliced oranges and cocoanut. Garnish the edge with sections of oranges and a spoonful of whipped cream and fruit over the top makes a desirable change.

Recipe 6.**STRAWBERRY SHORTCAKE.**

Materials.		Measure.
Pastry Flour	3	Cups
Sugar	2	Tablespoonfuls
Egg	1	
Butter	$\frac{1}{8}$	Cup
Baking Powder	4	Teaspoonfuls
Salt	$\frac{1}{2}$	Teaspoonful
Milk	$\frac{1}{8}$	Cup
Nutmeg		

DIRECTIONS.

Mix the dry ingredients and sift four or five times, then work in the shortening with the mixing fork. Beat the egg well and sufficient milk to make the dough so that it can be lightly rolled on the board. Put in round buttered tins and shape to fit the pan. Bake in a hot oven. Split the cake and cover with strawberries, which have been well covered with powdered sugar, standing in a warm place. Use the pastry bag and tube for arranging the whipped cream over

UTENSILS:

Bowl	Measuring Cup
Teaspoon	Bread Board
Mixing Fork or	Rolling Pin
Pastry Cutter	

the top. A large biscuit cutter may be used and made into individual short cakes which are more easily served.

Recipe 7.**FRUIT WHIPS.**

Materials.		Measure.
Raspberries	$1\frac{1}{2}$	Cups
Powdered Sugar ...	$1\frac{1}{4}$	Cups
White of Egg	1	
Lemon Juice	1	Tablespoonful

DIRECTIONS.

Put all of the ingredients into the whip churn at once. Cover and whip until stiff enough to stand alone, which will take from ten to twenty minutes. The colder everything is the less time it will take to whip. This recipe will answer for strawberries, prunes, peaches or any of the cooked evapor-

UTENSILS:

Whip Churn	Tablespon
Measuring Cup	

ated fruits and is a delicious dessert alone or over sponge cake. This will serve generously six or eight people.

Recipe 8.**MARSHMALLOW PUDDING.**

Materials.		Measure.
Whites of Eggs ...	4	
Gelatine	1	Tablespoonful
Gran. Sugar	1	Cup
Vanilla	1	Teaspoonful
Marshmallows		
Colorings		

DIRECTIONS.

Beat the whites to a stiff froth. Soften the gelatine in a very little cold water, to cover, and add one-half cup of boiling water. Add this to the beaten whites stirring constantly and then the sugar a little at a time. Flavor. Divide this into three parts, color a very delicate pink, a pale green and leave the other white. Place a piece of oiled paper in the bottom of the mold,

UTENSILS:

Egg Beater	Bowl
Measuring Cup	Vegetable Knife
Mold or Baking Pan	

arrange a few sliced marischino cherries on this, carefully turn in the white mixture, sprinkle over this chopped pecan nuts and sliced cherries. Then the pink layer with sprinkling of nuts and cherries and last the green mix-





ture. Set in a cold place to get very cold. Turn out on a dish, garnish with marshmallows, cherries and whipped cream. These may be made in individual molds and small cups will answer very well for these molds.

Recipe 9.**RICE PUDDING.**

Materials.		Measure.
Milk	1	Quart
Rice	$\frac{1}{3}$	Cup
Salt	$\frac{1}{2}$	Teaspoonful
Sugar	$\frac{1}{2}$	Cup
Cinnamon or Nutmeg flavoring		

DIRECTIONS.

Wash the rice in several waters. Heat the milk and sugar in a double boiler, stirring until the sugar is dissolved. Add all the remaining ingredients and stir three or four times for half an hour. Now turn into the buttered pudding dish and bake in a very slow oven three hours. Raisins, dates or figs may be added if desired. This pudding should not be dry but be of a creamy consistency.

UTENSILS:

Measuring Cup	Double Boiler
Measuring Spoon	Tablespoon
Pudding Dish	

All measurements level unless otherwise stated.

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Recipe 10.**PLUM PUDDING.**

Materials.	Measure.	Weight.
Seeded Raisins		$\frac{3}{4}$ lb.
English Currants...		$\frac{1}{4}$ lb.
Blanched Almonds..		$\frac{1}{4}$ lb.
Candied Lemon Peel		$\frac{1}{4}$ lb.
Candied Orange Peel		$\frac{1}{4}$ lb.
Candied Citron		$\frac{1}{4}$ lb.
Walnut Meats		$\frac{1}{4}$ lb.
Suet		$\frac{1}{2}$ lb.
Sifted Bread Crumbs		$\frac{1}{2}$ lb.
Gran. Sugar	1 Cup	
Cream (scant)	$\frac{1}{2}$ Cup	
Eggs	4	
Cinnamon	1 Teaspoonful	
Salt	$\frac{1}{2}$ Teaspoonful	
Cloves	$\frac{1}{2}$ Teaspoonful	
Nutmeg		
Brandy	1 Wine-glass	
Fruit Juice or Wine	1 Wine-glass	

DIRECTIONS.

Chop half the raisins and add to them the currants, chopped walnuts and almonds, citron, orange and lemon peel shredded fine. Now add all the remaining ingredients except eggs and cream and mix well together. Cover closely and let stand several days, at least 24 hours. Add the beaten eggs and cream and pack in well-buttered molds, cover tightly and steam six hours. Put away in a cool, dry place and when ready to use steam at least two hours, and longer will do no harm. Serve with hard sauce or ice cream.

In blanching the almonds either pour cold water over them for several hours to remove the skins or put over the fire with cold water, bring just to the boiling point, remove the skins and dry the almonds off quickly in the oven.

UTENSILS:

Food Chopper	Mixing Bowl
Egg Beater	Molds
Teaspoon	Measuring Cup
Scales	Steamer

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Recipe 11.

MINCE MEAT.

Materials.	Measure.	Weight.
Lean Boiled Beef...		3 lbs.
Suet		1½ lbs.
Chopped Apples ...	3 Quarts	
Stoned Raisins	1 Quart	
Currants	2 Cups	
Citron		¼ lb.
Molasses	1 Cup	
Juice of Oranges...	2	
Juice of Lemons...	2	
Grated rind of one of each		
Nutmeg	1	
Powdered Mace	1 Teaspoonful	
Salt	1 Tablespoonful	
Brown Sugar	3 Cups or 1½ Pints	
Cider	2 Cups	
Sherry	1 Cup	
Brandy as desired or Sweet Pickle		
Vinegar		

UTENSILS:

Measuring Cup	Scales
Grater	Lemon Squeezer
Sharp Knife	Measuring Spoons
Jars	Kettle

DIRECTIONS.

Chop the meat and suet fine and shred the citron. Mix all the dry ingredients together, then the liquids (except the sherry and the brandy). Mix all well together and bring slowly to the boiling point; boil five minutes. Remove from the fire and add sherry and brandy (if you use it) and seal in jars. This will make seven quart jars and cost about one dollar and a quarter.

All measurements level unless otherwise stated.

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Recipe 12.

PUMPKIN PIE.

Materials.	Measure.
Pumpkin	
Rich Milk	1½ Cups
Cream	½ Cup
Salt	1 Teaspoonful
Butter	1 Teaspoonful
Cinnamon	1 Teaspoonful
Ginger	1 Teaspoonful
Molasses	1 Tablespoonful
Sugar	¾ Cup
Eggs	2
Pastry for 2 pies...	

UTENSILS:

Large Bowl	Strainer
Colander	Measuring Cup
Measuring Spoon	Two Pie Pans
Board, Rolling Pin	Flour Sifter
Pastry Cutter	Potato Masher

DIRECTIONS.

Cut up the pumpkin without peeling and put into the colander; cover and place in the steam cooker and steam until tender. Put through the colander, using the wooden masher, and for every two and one-half cups of pulp use the above proportions, beating the eggs and melting the butter. Line the pie pans with good pastry. Break an egg in one pan, whirl it around until the white of the egg has covered the pastry. Pour the egg into the other pan and repeat. The egg may be used in this way and also used for the filling. Now fill full with the pumpkin mixture and bake in a moderate oven forty-five minutes or until done. Spoonfuls of whipped cream

pipied around just inside the crust and in the center, adds both to the looks and to the taste.

Cranberry jelly is fine poured over the top.

Recipe 13.

VANILLA ICE CREAM.

Materials.	Measure.
Cream	1 Quart
Gran. Sugar	1 Cup
Vanilla	2 Teapsoonfuls

UTENSILS:

Ice Cream Freezer	Cork and piece of
Double Boiler	Cheese Cloth
Measuring Cup	Ice Chipper
Measuring Spoon	

DIRECTIONS.

Pour half the cream and all of the sugar into the double boiler and place over the fire, stir only until the sugar is dissolved and the cream hot. Cool and add the remaining cream and flavoring and it is ready to freeze. In the meantime see that the ice cream freezer is perfectly clean, parts all together and ready for use. Place the dasher in the center of the can and pour

in the prepared cream mixture. Do this always, except in fruit mixtures; they should never go in until the cream is almost frozen hard. Replace the can top and gear frame; then fill the space around the can in the tub with shaved ice and salt, one-third rock salt and two-thirds ice, which have been well mixed together and not put around in layers as it is often done. Pile clear up over the top and turn, not too rapidly but steadily until the mixture begins to freeze, keeping the motion steady and even. When frozen remove the dasher, put on the cover with the cork and cheese cloth inserted. Drain, repack with shaved ice very full, cover with heavy paper or burlap and let ripen for two hours. To make strawberry ice cream add another cup of sugar, quart of berries pressed through the colander and add as directed above.

Recipe 14.

MAPLE ICE CREAM.

Materials.	Measure.
Eggs	2
Maple Syrup	$\frac{3}{4}$ Cup
Milk	$\frac{1}{2}$ Cup
Cream	$1\frac{1}{2}$ Cups

UTENSILS:

Ice Cream Freezer	Wooden Spoon
Measuring Cup	Egg Beater

DIRECTIONS.

Beat the yolks of the eggs until very light; add the hot maple syrup and the milk, stir and cook over the hot water until the mixture thickens. Then pour over the stiffly beaten whites of the eggs and cool. When cold add the cream, pour into a freezer and freeze. A cup of English walnuts or pecans broken fine are a nice change.

Recipe 15.**LEMON CREAM SHERBET.**

Materials.	Measure.
Sugar	1½ Cups
Lemons	3
Milk	2 Cups
Cream	2 Cups
Whites of Eggs	2
Pul. Sugar	2 Tablespoonfuls

DIRECTIONS.

Put the milk and sugar into the double boiler and stir until the sugar is dissolved and heated. Cool and add the cream and gradually the lemon juice. Turn into the freezer and freeze, turning slowly to have it fine grained. Beat the whites of the eggs until stiff, adding sugar. Pour this into the freezer, turn the dasher rapidly for a few minutes, re-pack and set aside to ripen.

UTENSILS:

Tablespoon	Spatula
Double Boiler	Measuring Spoon

Recipe 16.**MAPLE MOUSSE.**

Materials.	Measure.
Hot Maple Syrup...	1 Cup
Double Cream	1 Pint
Eggs	4

DIRECTIONS.

Heat the syrup in the double boiler. Beat the eggs until well mixed and slowly pour the hot syrup over them. Put back over the fire into the double boiler and cook until the mixture thickens, stirring carefully. Cool and add the cream which has been beaten stiff, fold this in gently but thoroughly. Pour this into a mold and pack as previously directed, in ice and salt, being

UTENSILS:

Double Boiler	Bowl
Egg Beater	Cream Whip
Mold	Ice Chipper
Pail	Ice
Salt	

sure to bind the cover with a strip of muslin dipped in butter or paraffine. Let stand three hours. Pineapple, oranges, raspberries, strawberries, coffee and chocolate all may be used in making these delicious parfaits or mousse, using a tablespoon of gelatine to a quart of cream and pulp from a box of berries.

All measurements level unless otherwise stated.

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Recipe 17.**BAKED PEACHES AND PEARS.**

Baked peaches are excellent either for breakfast or as a dessert at lunch or dinner. Select good sized freestones, pare, cut them in halves and remove the stones. Place a single layer in a baking dish, hollow side uppermost. Into each half put half a teaspoon of butter and the same amount of sugar, or a little more, if the family like sweets. Sprinkle nutmeg generously over the whole, and bake twenty to thirty minutes; when soft the peaches are done. Serve hot.

Recipe 18.

PEACH TART.

Materials.	Measure.
Heavy Cream	1 Pint
Sugar	$\frac{1}{2}$ Cup
Vanilla	1 Teaspoonful
Lemon Juice	1 Tablespoonful
Peaches	

UTENSILS:

Whip Churn	Cake Pan
Sharp Knife	

DIRECTIONS.

Bake a sponge cake in a round or square pan. Remove the center of the cake, leaving a rim about an inch wide and also a wall and bottom about an inch thick. Whip the cream, sugar and flavoring until stiff and solid. Fill the cake and set in a cool place. When ready to serve garnish with sliced peaches and finely chopped pistachio nuts.

Recipe 19.

GRAHAM PUDDING.

Materials.	Measure.
Graham Flour	$1\frac{1}{2}$ Cups
Porto Rico Molasses	$\frac{1}{2}$ Cup
Milk	$\frac{1}{2}$ Cup
Butter	$\frac{1}{4}$ Cup
Egg	1
Soda	$\frac{1}{2}$ Teaspoonful
Salt	$\frac{1}{2}$ Teaspoonful
Seeded Raisins	1 Teaspoonful
Cinnamon	$\frac{1}{2}$ Teaspoonful
Cloves	$\frac{1}{4}$ Teaspoonful

UTENSILS:

Measuring Cup	Measuring Spoon
Egg Beater	Bowls
Steamer	

DIRECTIONS.

Soften the butter but do not melt. Beat until creamy and add molasses, milk, well-beaten egg and all dry ingredients well mixed and sifted and the raisins cut in two. Turn into a well-buttered mold, cover and steam two and one-half hours.

Serve hot with lemon sauce.

Recipe 20.

MARLBORO TARTS.

Materials.	Measure.
Tart Apples	6
Sugar	$\frac{1}{2}$ Cup
Melted Butter	$\frac{1}{2}$ Cup
Juice and Rind of Lemon	
Milk	$\frac{1}{2}$ Cup
Eggs	2
Nutmeg	

UTENSILS:

Measuring Cup	Sieve
Grater	Lemon Squeezer
Pie Pan	

DIRECTIONS.

Quarter and stew the apples, put through the sieve and to each cupful of this pulp use the proportions given of all seasoning. Beat the whites of the eggs stiff and add at the last moment. Have a pie pan lined with paste and fill this with the apple mixture. Bake in a moderately quick oven about twenty-five minutes.

Recipe 21.

LEMON CHEESE CAKES.

Materials.	Measure.
Cottage Cheese	1½ Cups
Sugar	¾ Cup
Cream	2 Tablespoonfuls
Grated Rind and Juice of Lemon...	1
Eggs	3
Currants and Sliced Citron	½ Cup
Vanilla	1 Teaspoonful

UTENSILS:

Potato Ricer	Measuring Cup
Tablespoon	Teaspoon
Lemon Squeezer	

DIRECTIONS.

Press the cheese through the potato ricer. Add all the ingredients to it, with the eggs beaten very light. Mix thoroughly and line patty pans with rich pastry and fill with the mixture. Bake about 15 minutes or until the pastry is well baked and the mixture is thickened. Or the fruit may be omitted and the patties covered with Bar de Duc currants.

Recipe 22.

PUMPKIN PIE.

Materials.	Measure.
Pumpkin	1½ Cups
Sugar	¾ Cup
Cinnamon	1 Teaspoonful
Ginger	½ Teaspoonful
Salt	½ Teaspoonful
Eggs	2
Milk	1½ Cups
Cream	½ Cup
Plain Paste	

UTENSILS:

Pastry Board	Measuring Cup
Rolling Pin	Egg Beater
Kettle	Measuring Spoon
Coarse Sieve	Mixing Bowl
Pie Pan	

DIRECTIONS.

Cook the pumpkin until dry and put through a coarse sieve. Then add the ingredients in the order given, beating the eggs and adding last. Line a deep pie pan with good rich paste and fill with the pumpkin and bake in rather hot oven. Wrap the edge of pastry with wet cloth to keep from burning the edges

Recipe 23.

APPLE RICE PUDDING.

Materials.	Measure.
Rice	½ Cup
Sugar	½ Cup
Milk	3 Cups
Eggs	3
Vanilla	½ Teaspoonful
Tart Apples	6
Jelly	

UTENSILS:

Apple Corer	Baking Pan
Measuring Cup	Teaspoon
Sauce Pan	Egg Beater

DIRECTIONS.

Wash the rice well and add slowly to one quart of boiling water and boil hard for fifteen minutes. Drain and blanch with cold water. Mix the milk, sugar and beaten yolks with flavoring. Wipe the apples and core, being careful not to go clear through. Arrange in a slightly buttered baking dish and pour the rice mixture all around the apples. Bake until the pudding is set and the apples are done in not too hot an oven. When cold fill the apples

with jelly and the whites whipped stiff with three tablespoonfuls of sugar beaten with them and piled over the top. Serve with cream.

Recipe 24.

APPLE TAPIOCA.

Materials.	Measure.
Instantaneous Tapioca	½ Cup
Boiling Water	2 Cups
Sugar	½ Cup
Lemon Juice	
Salt	½ Teaspoonful
Sour Apples	3
Nutmeg	

DIRECTIONS.

Measure the tapioca and put into the bowl with sufficient cold water to cover; it will soften in a minute. Put into the double boiler, add boiling water and salt, stir and cook until clear. Core and pare the apples, rolling them in lemon juice. Set them in a buttered baking dish, fill the centers with sugar, a small piece of butter and a little nutmeg. Pour the tapioca over the whole and bake in a moderate oven until the apples are tender. Serve with sugar and cream.

UTENSILS:

Bowl	Double Boiler
Apple Corer	Baking Dish
Vegetable Knife	Wooden Spoon

Recipe 25.

PRUNE FLUFF.

Materials.	Measure.	Weight.
Large Prunes		½ lb.
Whites of Eggs ...	4	
Powdered Sugar ...	½ Cup	
Lemon Juice	1	Tablespoonful

DIRECTIONS.

Wash and soak the prunes over night in cold water. The next morning put them into the double boiler over the fire and cook very slowly. When done remove the prunes and boil the juice down to one-half cupful. Pit the prunes, add the juice and rub all through a colander. Have the whip churn on ice and the eggs cold. Put

UTENSILS:

Double Boiler	Bowl
Whip Churn or	Colander
Egg Beater	

all the ingredients into the churn and whip until stiff; this will take from ten to twenty minutes. Serve very cold in tall glasses. Half apricots and half prunes give a nice flavored dessert. Serve sponge cake with this.

Recipe 26.

APPLE OR FRUIT CUPS.

Sift together one pint of flour, a half teaspoonful of salt, two tablespoonfuls of sugar and one teaspoonful of baking powder. Beat one egg, add four tablespoonfuls of milk and stir into the dry mixture, adding more milk as necessary to make a thick batter. Add two tablespoonfuls of melted butter and beat hard. Butter some baking cups and put in each a spoonful of the batter. Add a quarter of a tart apple, and more batter to cover and two-thirds fill the cup. Steam or bake and serve with a hard sauce. Any kind of fresh fruit may be used instead of the apple.

Recipe 27.

FIG PUDDING.

Materials.	Measure.	Weight.
Figs		$\frac{1}{2}$ lb.
White Grated Bread Crumbs	1 Cup	
Brown Sugar	1 Cup	
Chopped Suet	1 Cup	
Milk	1 Cup	
Cinnamon	1 Teaspoonful	
Cloves	$\frac{1}{4}$ Teaspoonful	
Salt	$\frac{1}{4}$ Teaspoonful	
Well-Beaten Eggs..	2	

DIRECTIONS.

Put the figs and suet through the food chopper and grate the white part of a stale loaf of bread until you have the given amount. Mix all the ingredients with these, the well-beaten eggs last. Mix well and pour into a well-buttered mold or pan and steam for three hours. Serve hot with lemon sauce.

UTENSILS:

Steamer	Food Chopper
Grater	Egg Beater
Measuring Cup	Mold or Pan

Recipe 28.

JELLIED APRICOTS.

Materials.	Measure.	Weight.
Evaporated Apricots		$\frac{1}{2}$ lb.
Gran. Sugar	$\frac{1}{2}$ Teaspoonful	
Cream		

DIRECTIONS.

Wash the apricots and soak over night in cold water. The next morning turn them into the double boiler and cook over a very slow fire until quite tender but so they will keep their shape. Measure the syrup and for each cupful use the given amount of gelatine softened in a little cold water. Re-

UTENSILS:

Bowl	Double Boiler
Measuring Cup	Individual Molds

heat the syrup, add the gelatine and stir until dissolved. Wet the molds, put an apricot in the bottom of each one and pour over the syrup. Set in a cold place to harden. Turn out and serve with cream. Any evaporated fruit will answer for this recipe.

BEVERAGES.

(Including Coffee, Tea, Chocolate, Cocoa, Lemonades, Ginger Ale, Fruit Syrups, Punch and Home-Made Wines.)

"Simple living and high thinking have the approval of learned men and women."

Tea, coffee, chocolate or cocoa are the beverages most indulged in, in the average home, but a few additions have been made under this heading. Water is presumably the true beverage; but with all the numerous "Waters" to drink, one is not quite sure whether they have the right one, and if they have one are not quite sure but they should have chosen the other. But good

water we must drink, and plenty of it, if we wish to keep in a good healthy condition.

Tea and coffee should be taken in moderation and coffee must always be of the best, and made most carefully. Never allow the coffee to be pulverized as that means "burnt" (through grinding) coffee, but finely ground, and for large quantities one-half pound to four quarts of water.

A cup of chocolate or cocoa well made is a wholesome food. Always make in a double boiler, and it requires cooking. Not actively boiling, but with the steady water heat underneath should be cooked sufficiently to take away that "raw taste" so often found in a cup of chocolate in public places.

Tea is usually poor, not only on account of the indifference with which people usually buy this article, but the greater indifference with which it is made. As with coffee, the water should be freshly boiled and when possible use a tea ball or strainer; then by dipping up and down you can have just the desired strength. But this is not always convenient, so use a hot earthen pot and boiling water, let stand two or three minutes and with a good tea the infusion is delicate and not unwholesome when taken in moderation.

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Recipe 1. HOW TO MAKE COFFEE.

Materials.		Measure.
Coffee	4	Tablespoonfuls
White of Egg	1	Tablespoonful
Cold Water	$\frac{1}{4}$	Cup
Boiling Water	3	Cups

DIRECTIONS.

A great deal both of interest and information might be written about coffee, but it is not wise to take it up here. Always buy the best coffee that can be bought, and that does not always mean the highest priced. Inform yourself so as to know good coffee. Do not always blame the grocer if your coffee is poor; sometimes the poor coffee is

UTENSILS:

White enameled Coffee Pot	
Tablespoon	Measuring Cup

the result of a not perfectly clean coffee pot. Once a week put a teaspoonful of baking soda into the pot, partly fill it with water and boil for at least ten minutes. Then wash thoroughly and you will find it sweet and clean. So there are three necessities for good coffee, first an enamel or granite pot kept perfectly clean, or buy a cheaper coffee pot (not tin, however) and have a new one oftener. Second, a good blending of the best Mocha and Java coffee; and third, freshly boiled water. Scald the pot, grind the coffee about as fine as coarse granulated sugar. Beat the egg in the cold water, add the coffee and mix well. Pour into the coffee pot and add one cup of boiling water and bring quickly to the boiling point. Now this must be done always, or the coffee is ruined. Set back on the stove where it will keep hot, but not boiling, and add the remaining two cups of boiling water. Let stand two or three minutes, settle with a very little cold water and serve at once.

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Recipe 2.**DRIP COFFEE.**

Materials.	Measure.
Coffee	2 Tablespoonfuls
Boiling Water	4 Cups

DIRECTIONS.

There are so many percolators on the market that one is at a loss to know which one to choose. Select one with as few separate parts as possible, and easy to keep clean. It is not wise to choose those having washable bags.

UTENSILS:	
Drip Coffee Pot	Tablespoon
Measuring Cup	

When you have wisely made your selection, do not take it home and set it on the shelf, but use it, as coffee made in this manner is for most people perfectly harmless. Put the freshly boiled water into the lower part of the coffee pot, and the coffee ground as fine as it can be ground without pulverizing it, into the upper section. Put on the cover and place over the fire. In from five to eight minutes you will have a most delicious coffee. Tea can be made in the same manner. These drip coffee pots or percolators can be purchased to have the coffee made in the kitchen or with alcohol lamps for table use.

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Recipe 3.**CHOCOLATE.**

Materials.	Measure.	Weight.
Chocolate		2 oz.
Hot Water	1 Pint	
Milk	1 Pint	
Sugar	3 Tablespoonfuls	
Vanilla	1 Teaspoonful	

DIRECTIONS.

Put the chocolate into the double boiler and add the hot water, stirring until dissolved and hot. Then add the milk which has been heated, beat well until the water boils well underneath. Add the sugar and beat again. Remove from the fire, flavor, and serve in heated cups with whipped cream. Be sure the chocolate is cooked and does not have a raw taste as this is ruinous

UTENSILS:	
Double Boiler	Measuring Cup
Teaspoon	Tablespoon
Egg Beater	

to good chocolate. Iced cocoa is very nice. Prepare the cocoa a little stronger than usual and when cool put it on the ice and chill. Serve with shaved ice and whipped cream.

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Recipe 4.

COCOA.

Materials.	Measure.
Cocoa 4	Teaspoonfuls
Sugar 6	Teaspoonfuls
Boiling Water ½	Pint
Milk 1½	Pints
Pinch of Salt	
Vanilla 1	Teaspoonful

DIRECTIONS.

Mix the cocoa and sugar well together in the double boiler, and add the boiling water, stirring all the time until it reaches the boiling point. Add the milk and stir constantly until very hot; now whip with a Dover egg beater until light and frothy. Cover for five minutes. Flavor and serve plain or with whipped cream.

UTENSILS:

Measuring Cup	Double Boiler
Teaspoon	Egg Beater

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Recipe 5.

GINGER ALE.

Ginger ale is the foundation of many agreeable drinks and fruit punches, since almost all fruits and flavors seem to harmonize well with the ginger and lemon of which it is made. In two gallons of water dissolve three pounds of granulated sugar, and add the beaten whites of three eggs and two ounces of ground ginger, previously dissolved in water. Let the mixture come to a boil, skim and set aside to cool. Now add the juice of four large lemons, one-fourth a yeast cake (compressed) previously dissolved in a little water, and stir the mixture thoroughly. Let stand for a few minutes, and then strain through a cheese cloth bag, and pour into bottles. Set away in a cool dark place, and in forty-eight hours, the ginger ale will be ready to drink. An acid flavor may be given to this ale by squeezing the juice of half a lemon into a tumbler, and then filling the glass with the ale.

Recipe 6.

FRUIT SYRUPS.

For a change in punches try rhubarb, raspberry, currant, pineapple, or strawberry-ade. These, as also lemonade, are better if sugar syrup rather than crude sugar be used for sweetening, but on no account should the fruit juice be cooked. Add this when the syrup has become cold. A little lemon juice to give "point" to the particular fruit flavor that is used is essential in all beverages of this class.

Remember to use the sweet element sparingly even if the beverage is to be used half frozen; for sugar is a fuel food and in consequence is not "in order" during the heated term. Half a cup of sugar is enough for unfrozen mixtures; two-thirds of a cup may be required when the beverage is to be frozen. But, while stinting on the sugar be generous with the fruit juice, and if the quantity at hand of one variety be scanty, add the juice of some other fruit and call the concoction a punch.

Recipe. 7.

LEMON SYRUP.

Materials.	Measure.	Weight.
Lemon Juice	1 Quart	
Gran. Sugar		6 lbs.
Water	1 Quart	
Whites of Eggs	2	

DIRECTIONS.

Roll the lemons hard under your hand to soften them and squeeze out every bit of juice. Put the sugar into a porcelain lined kettle. Beat the eggs to a stiff froth, mix them with the water and add to the sugar. Stir until the sugar is dissolved. Place the kettle over the fire and boil and skim until there is no scum arising to the surface. Add the lemon juice to the boiling

UTENSILS:

Lemon Squeezer	Puree Sieve
Porcelain lined	Egg Beater
Kettle	Skimmer
Wooden Spoon	

syrup, cover and boil gently ten minutes. Remove from the fire and when cool fill bottles which have been rinsed with alcohol. Use bottles with patent stoppers. This syrup will keep well the entire year, but should be made in the spring when lemons are cheap and plentiful. Oranges may be used in the same manner as above, using two quarts of juice and the same ingredients. Pineapples, cherries, grapes, currants, raspberries and strawberries all make syrups which make delicious drinks, sauces, and ice creams when these fruits are out of season. Be careful of too much boiling as it destroys the flavor and color of the syrup. Use only granite or porcelain lined kettles and stir with wooden spoon.

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Recipe 8.

FRUIT PUNCH.

Materials.	Measure.	Weight.
Ceylon or English		
Breakfast Tea ...		1 oz.
Oranges	2	
Lemons	6	
Sugar	4 Cups	
Grated Pineapple ...	1 Pint	
Vanilla and Almond		
Extract	1 Teaspoonful	
Bananas	2	
Ginger Ale	1 Pint	
Water	3 Quarts	
Ice		

DIRECTIONS.

Put the tea into the stew pan and cover, with a quart of boiling water; cover the pan for twenty minutes, and strain. Grate the yellow rinds from half the lemons and oranges adding this to the sugar and mixing all with the infusion. Stir until the sugar is dissolved, place over the fire and bring to the boiling point and boil five minutes. Strain and cool. Add the juice of the lemon and oranges and all the other ingredients. Turn this into the punch bowl with a nice block of ice and serve. Fresh berries may be added to this or grape juice may be used instead of ginger ale.

UTENSILS:

Stew Pan	Grater
Measuring Cup	Lemon Squeezer
Punch Bowl	

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Recipe 9.

Materials.	Measure.	Weight.
Fresh Mint Sprigs..	1 Dozen	
Shaved Ice	1 Cup	
Sugar	¼ Cup	
Lemon Juice or		
Pure Cider Vinegar	2 Tablespoonfuls	
Raspberry Syrup ...	1 Cup	
Water	1 Quart	

UTENSILS:

Tablespoon	Measuring Cup
Punch Bowl	Shaker
Ice Shaver	Lemon Squeezer
Chopping Bowl and	Knife

MINT PUNCH.

DIRECTIONS.

Chop the mint fine, add to the ice and sugar. Put all into a shaker and shake hard until the sugar is dissolved; pour into a punch bowl, add the other ingredients and serve very cold.

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Recipe 10.

Materials.	Measure.
Shaved Ice	½ Glass
Water	¼ Glass
Lemon Syrup or	2 Tablespoonfuls
Lemon	½
Sugar	2 Teaspoonfuls
Creme de Menthe	
Cherry	1
Creme de Menthe...	1 Teaspoonful
Mint	2 Sprigs

UTENSILS:

Ice Shaver	Straws
Lemon Squeezer	Tall Glasses

MINT LEMONADE.

DIRECTIONS.

Put the shaved ice into the glass and add the lemon syrup or the sugar dissolved in the lemon juice. Stir well, then add the remaining ingredients, decorating with sprigs of mint standing upright in the glass, and three straws. This is not only very refreshing but attractive as well.

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Recipe 11.

Materials.	Measure.
Tart Apples	6
Lemons	3
Stick Cinnamon	¼
Sugar	4 Cups
Bay Leaves	2
Raisins	1 Cup
Oranges	1

UTENSILS:

Porcelain Kettle	Paring Knife
Grater	Measure
Jelly Bag	Ice Shaver

APPLE LEMONADE.

DIRECTIONS.

Mash, quarter and core the apples; put them into the kettle with raisins, bay leaves and cinnamon. Add two quarts of water and bring to the boiling point; add two more quarts of cold water in which the sugar and grated rind from the lemons and oranges have been dissolved. Simmer slowly half an hour, strain and when cool and ready to serve add the juice of the lemons and oranges. Set on ice until very cold. Put a little shaved ice into the sherbet cups, fill with the cold lemonade and serve.

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Recipe 12.

ELDERBERRY WINE.

Materials.	Measure.	Weight.
Elderberry Juice ...	5 Quarts	
Sugar		15 lbs.
Water		

DIRECTIONS.

UTENSILS:

Fruit Press	Five-Gallon Keg
Quart Measure	Seals

Pick the elderberries when dead ripe and extract the juice with a fruit press. Into the keg put the above amount of juice dissolved in water. Be sure the sugar is thoroughly dissolved before putting it into the keg. Fill the remaining space with water. Rack off in February and wash keg

in which you can replace the clear wine or it can be bottled. This makes a heavy sweet wine on the order of port. To make it more tart and without so much body use four quarts of juice and fourteen pounds of sugar. The first wine is dark colored while the latter is lighter in color. To make the wine from the elderberry blossoms pick when dead ripe and falling from the bush; pick from the stems and to one quart of blossoms add the juice of two lemons, four pounds of sugar and pour over all one gallon of boiling water. Let cool and when lukewarm add one half yeast cake to five gallons of wine and let ferment three days. Put into a keg, leave bung out, and let ferment for a month or six weeks. When through with fermentation it can be racked off and bottled.

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CHAFING DISH COOKERY.

(Including Rarebits, Creamed Oysters, Etc.)

"The social meal in the home is an ideal preparation for good digestion."

While the chafing dish started the fashion, it has quickly grown to be one of the very best of friends. There are many homes where you find it, and nowhere is it more serviceable or welcome than at the Sunday night supper.

All who possess this most useful dish are on the lookout for new exploits in the chafing dish line. Always making fresh and astonishing creations. In the recipes here given they may represent to many merely old friends with new faces, or new names, or perhaps the old dress with additional frills, which add not only to the attractiveness of the dish but the taste as well. There are few things that cannot be done in the chafing dish if one knows how. The greatest aid to successful results is having everything in readiness for work. Arrange all material conveniently on either side of dish; milk and cream and all liquids, in fact, in attractive pitchers. Butter molded in balls measuring one tablespoonful. Matches in a little tray, etc. Chafing dish on a tray. Teaspoon and tablespoon for measuring and all seasonings arranged on a small tray. It is not necessary to tell how these things should be arranged,

but neatly and in order and perfectly convenient. Give thought and care to this as it saves time and confusion.

See that the lamp is in perfect working order and filled.

If all the preparations are carefully made, each or any dish will be quickly and easily cooked.

For a quick breakfast and where you do not have access to gas, its worth cannot be estimated. The chafing dish has come to stay.

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Recipe 1.

CREAMED OYSTERS.

Materials.		Measure.
Oysters	1	Pint
Butter	2	Tablespoonfuls
Flour	2	Tablespoonfuls
Cream	1	Pint
Celery Salt	$\frac{1}{2}$	Teaspoonful
Salt	$\frac{1}{2}$	Teaspoonful
Dash of Nepaul		
Pepper		

UTENSILS:

Chafing Dish Large Spoon

substitute one-half cup of sherry, one tablespoonful of Worcestershire sauce and one stalk of celery cut very fine and cooked slightly in the butter.

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DIRECTIONS.

Put the butter into the chafing dish and when heated to be just creamy, add the flour; blend well together and when smooth, gradually add the cream, stirring constantly until the sauce is smooth. Add the oysters which have been well rinsed, small particles of shell removed and drained. Bring to the boiling point, season and serve. A very nice change may be had by using half the given amount of cream and

Recipe 2.

OYSTERS WITH MUSHROOMS.

Materials.		Measure.
Oysters	1	Pint
Mushrooms	1	Can
Butter	1	Large Tablesp'l
Flour	1	Large Tablesp'l
Cream	1	Cup
Yolks of Eggs	2	
Salt	1	Teaspoonful
Dash of Paprika ...		

UTENSILS:

Chafing Dish Tablespoon
Toast Measuring Cup
Small Egg Beater

DIRECTIONS.

Put the butter into the chafing dish; when slightly melted add the flour and stir until well blended; now pour in the cream and one-half cup of the liquor from the mushrooms. Stir until smooth. Add the oysters and the small mushrooms whole or sliced. Bring to the boiling point and add the well-beaten yolks slowly. Remove at once from the fire, season and serve on squares of toast.

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Recipe 3.**WELSH RAREBIT.**

Materials.	Measure.	Weight.
American Cheese, yellow		1 lb.
Butter	1	Tablespoonful
Catsup	1	Tablespoonful
Ale or Beer	$\frac{1}{2}$	Cup
Salt	$\frac{1}{2}$	Teaspoonful
Horseradish	1	Teaspoonful
Clove of Garlic	1	
Cayenne Pepper ...		
Worcestershire Sauce		

DIRECTIONS.

Grate the cheese or cut it very fine. Rub the pan with the garlic. Mix all the seasonings with the cheese. Heat the beer and when boiling hot add the cheese mixture and stir rapidly and constantly until smooth and creamy. Beat very hard at the last and serve at once on squares of toast.

Be very sure the plates are hot, also the toast, and ready the instant the rarebit is done. The success of this depends largely upon the cheese. Nothing is better than a good soft yellow New York cheese.

UTENSILS:

Chafing Dish	Grater
Tablespoon	Teaspoon

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Recipe 4.**SHRIMP WIGGLE.**

Materials.	Measure.
Shrimps	1 Cup
Peas	1 Cup
Paprika	$\frac{1}{8}$ Teaspoonful
Flour	1 Large Tab'sp'l
Milk	$1\frac{1}{2}$ Cups
Butter	2 Tablespoonfuls
Salt	1 Teaspoonful
Chopped Parsley ...	1 Teaspoonful
Extract of Beef	$\frac{1}{2}$ Teaspoonful

DIRECTIONS.

Prepare the shrimps by rinsing, draining, and cutting or breaking in small pieces. Soften the butter in the chafing dish, mixing the flour well with it; then pour on gradually the milk and as soon as the sauce thickens add the shrimps and peas with all the seasonings. Bring to the boiling point and serve.

UTENSILS:

Chafing Dish	Teaspoon
Tablespoon	

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Recipe 5.**SHRIMPS A LA POULETTE.**

Materials.	Measure.
Shrimps	1 Cup
Butter	1 Tablespoonful
Flour	1 Tablespoonful
Cream	1 Cup
Salt	$\frac{1}{2}$ Teaspoonful
Yolks of Eggs	2
Lemon Juice	1 Tablespoonful
Nepaul Pepper or Paprika	

DIRECTIONS.

Mix the butter and flour well together in the chafing dish. Add the cream gradually, stirring all the time. Now add the shrimps, season and when hot serve. Whole wheat bread sliced thin, buttered and a small piece of lettuce thinly spread with Hot Relish, cut in fancy shapes for sandwiches are very nice served with shrimps.

UTENSILS:

Measuring Cup	Chafing Dish
Tablespoon	Teaspoon
Lemon Squeezer	

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Recipe 6. SWEETBREADS SAUTE WITH FRENCH PEAS.

Materials.	Measure.
Sweetbreads	
Grated Bread	
Crumbs (white) ..	
Egg	
Butter	
Salt	
Bacon	

UTENSILS:

Chafing Dish
Shallow Dish or Saucer for Egg
Plate for Bread Crumbs

DIRECTIONS.

Prepare the sweetbreads by washing well in cold water, removing any of the pipes and membranes. Cook them in boiling salted water with one tablespoonful of lemon juice twenty minutes. Then put them in cold water for a few minutes, and then into the refrigerator until wanted for the chafing dish. Sprinkle with salt and pepper, roll in fine white bread crumbs, then in the beaten egg, again in the crumbs and saute in the chafing dish

after delicately cooking the bacon. Serve the sweetbreads and bacon garnished with the French peas heated and seasoned with butter, pepper and salt.

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Recipe 7. CHICKEN HOLLANDAISE.

Materials.	Measure.
Cooked Chicken 1	Pint
Chopped Celery ... ½	Cup
Butter	2 Tablespoonfuls
Flour	2 Tablespoonfuls
Onion Juice	1 Teaspoonful
Chopped Parsley ... 1	Tablespoonful
Yolks of Eggs 2	
Juice of one-half	

Lemon

Paprika	½ Teaspoonful
Kitchen Bouquet ... ½	Cup
Stock or Water 1	Cup

UTENSILS:

Chafing Dish Measuring Spoon
Measuring Cup Egg Beater
Tablespoon Bowl

DIRECTIONS.

Melt the butter in the chafing dish, add the celery and cook just a few moments. Stir in the flour and water or stock gradually. Add the remaining seasonings with the carefully cooked meat of the chicken cut in small pieces. Stir all well together and when well heated add the yolks of the eggs well beaten. Serve with watercress sandwiches and thin bread and butter.

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Recipe 8. THE QUEEN'S TOASTED CHEESE.

Materials.	Measure.	Weight.
Cheese, not too soft		½ lb.
Ale	3	Tablespoonfuls
Champagne	1	Small Glass
Dash of Cayenne ...		
Salt	½	Teaspoonful
Toast		

UTENSILS:

Chafing Dish Grater
Tablespoon Wine Glass
Teaspoon

DIRECTIONS.

This is the recipe from the Lodge at Windsor. Grate the cheese fine and add the ale and champagne. Put into the chafing dish and stir well until the mixture is smooth and creamy. Add the seasoning and serve very hot from the chafing dish on squares of toast. A light salad with French Dressing is a nice accompaniment to this.

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Recipe 9.

TOMATO RAREBIT.

Materials.	Measure.	Weight.
Soft American Cheese		1 lb.
Strained Tomatoes..	½ Pint	
Salt	1 Teaspoonful	
Nepaul Pepper		
Soft White Bread Crumbs	1 Cup	
Clove of Garlic		
Kitchen Bouquet ...	½ Teaspoonful	

UTENSILS:

Chafing Dish	Tablespoon
Teaspoon	Measuring Cup
Grater	

DIRECTIONS.

Grate the cheese and mix all the ingredients with it. Rub the chafing dish with a clove of garlic. Turn the mixture into the pan and stir rapidly until hot and smooth. Serve at once on toast accompanied with cucumber salad and French Dressing.

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Recipe 10.

CHICKEN A LA KING.

Materials.	Measure.
Cooked Chicken, diced	2½ Cups
Cream	2 Cups
Button Mushrooms..	½ Cup
Butter	3 Tablespoonfuls
Flour	2 Tablespoonfuls
Green Pepper	½
Salt	
Paprika	
Toast	

UTENSILS:

Chafing Dish	Measuring Cup
Wooden Spoon	Tablespoon

DIRECTIONS.

Arrange the materials in the following manner to bring to the table: mold the butter, a tablespoonful in each ball; have the pepper chopped fine on a little butter chip; measure the flour, the cream in a pitcher, the mushrooms cut in halves and the chicken cut in cubes in a dish. Light the chafing dish and put the butter in the pan to melt, add the pepper and cook three or four minutes without allowing the butter to brown. Stir in the flour, then the cream, stirring until it thickens. Set

into the hot water pan, then add mushrooms, chicken, salt and paprika. When heated thoroughly, serve on toast.

THE CANNING OF FRUITS AND VEGETABLES.

(Including Both Large and Small Fruits, Pineapples, Asparagus, Beans, Beets, Tomatoes and Green Corn.)

"Practice makes perfect."

It is not difficult to can all kinds of fruits and vegetables if one studies sterilization, has perfect utensils and knows how to select fruits. The slight-

est disregard of necessary rules in the canning or preservation of fruits may cause great loss, not only of time and strength, but money as well.

The following rules have been used many times with perfect success. If you fail it is because you have not followed the suggestions given.

All fruits and vegetables to be perfect should be canned the day they are picked. If this is not possible, when purchased at the stores, come as close to freshness as you possibly can.

They must be ripe, not bruised, and free from decay.

They must be cooked in the cans or jars in which they are to be kept; and the best process known is canning by steam. Cans or jars and covers (and rubbers if you use them) should be perfect. Use new rubbers every year. Use jars with covers which are absolutely unaffected by any known food acid, and sweet and clean as the glass itself.

The jars must be sterilized by placing in the cooker and gradually bring water to the boiling point, and boil for ten minutes. Covers should be dipped in boiling water and not handled on the inside after this sterilizing.

The contents of every jar must be sterile; that is, sufficiently boiled to destroy all the germ life in it; otherwise they will surely spoil, and one germ will spoil the entire contents. Different fruits and vegetables require different time for cooking, as some germs are tougher and longer lived than others.

Fewer utensils are necessary with the steam cooker than any other method of canning, and these should also be sterilized to insure perfect success.

Recipe 1. RASPBERRIES AND ALL SMALL FRUITS.

Materials.	Measure.
Large Red Rasp- berries	1 Quart
Currant Juice	$\frac{1}{2}$ Pint
Sugar	$\frac{2}{3}$ Cup

DIRECTIONS.

Place the required number of jars and covers in the kettle of cold water over a slow fire and bring slowly to the boiling point. Mash the currants and press out the juice until you have the required amount. Usually a quart of currants makes one-half pint of juice. Bring this juice to the boiling point and add the sugar. Bring to the boiling point again, skim and boil five minutes. Fill the hot sterilized jars with the

UTENSILS:

Steam Cooker	Wide Mouthed
Large Kettle	Funnel
Large Enamel	Fruit Jars
Spoon	Stew Pans
Towels	Holders

berries, adjust the rubbers and pour over the boiling syrup. Stand the jars in the cooker and steam five minutes. If the jars are not quite full, fill from one jar then return them to the cooker and steam five minutes longer. Seal tightly, stand aside until cool. Then tighten again.

In canning strawberries, place them in a colander and dip them up and down two or three times in cold water to remove any sand or dirt. Drain and stem them. Make your syrup, using water in place of currant juice. Fill the jars full of berries and place in the cooker. Steam for ten minutes. Lift out three jars, drain free from juice and fill two of them from the steamed fruit of the third; fill with the boiling syrup, adjust rubbers and stand again

in the cooker, steaming five minutes longer. Seal as directed for raspberries. Keep in a cool, dark place.

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Recipe 2.**CANNING LARGE FRUITS.**

(Peaches, Pears, Apples, Pineapples, Quinces, Etc.)

Materials.	Measure.	Weight.
Peaches		8 lbs.
Sugar		2 lbs.
Water	1 Quart	

DIRECTIONS.

Put the jars and covers into the large kettle filled with cold water, and bring slowly to the boiling point. Add the sugar to the given amount of water, stirring until the sugar is dissolved. Place it over the fire and boil ten minutes. Skim. While the jars are heating and the syrup boiling, put the fruit a little at a time into the wire basket and dip in hot water for just a moment. Cut the peaches in halves, re-

UTENSILS:

Steam Cooker	Wide Mouthed
Stew Pan	Funnel
Wire Basket	Wooden Spoon
Holders	Towels
Measuring Cup	Fruit Jars
Large Kettle	Scales

move the stones and the skins. Be sure you do this, as the peaches are kept in perfect shape. Take one jar at a time from the hot water, drain and neatly arrange the fruit in them. Fill to overflowing with the boiling syrup, adjust the sterilized rubbers and steam five minutes. Have some of the boiling syrup in readiness and if the syrup is not at the top of the jar, fill with the syrup to overflowing and seal at once.

These directions will answer for all large fruits such as pears, apples, pineapples and quinces. Add just a little green ginger root to pears for flavor.

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Recipe 3.**ASPARAGUS AND STRING BEANS.**

Materials.	Measure.
Asparagus	
Boiling Water	
Salt	

DIRECTIONS.

Wash, drain and trim fresh asparagus. Fill the sterilized jars neatly heads up; adjust the rubbers and place them in the steam cooker and steam without water three-quarters of an hour, then fill the jars with boiling water. Add a teaspoonful of salt to each jar and steam thirty minutes longer. Place cover on the jar before

removing from the cooker, then lift out carefully and screw covers on tightly. Always tighten the covers after the jars have become cold.

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Recipe 4. PEAS, LIMA BEANS OR BEETS.

Materials.
 Peas
 Boiling Water
 Salt

Measure.**DIRECTIONS.**

Select very young peas and be sure they are freshly picked. Sterilize the jars as directed in previous recipes. Fill the peas in the jars, stand in the steam cooker and steam forty minutes; put a teaspoonful of salt in each jar and fill to overflowing with boiling water. Steam again twenty minutes and screw on the tops. In removing

UTENSILS:

Steam Cooker	Wide Mouthed
Towels	Funnel
Tablespoon	Holders
Large Kettle	Fruit Jars

the tops from the kettle in which they are sterilized, do not turn them up or let anything come in contact with them, not even the fingers. Peas contain sugar. The air is full of wild yeast plants which live upon such material. One spore on the inside of the lid might spoil the entire jar of vegetables. Keep in a cool, dark place.

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Recipe 5. CORN.

Materials.
 Corn

Measure.**DIRECTIONS.**

After removing the husks and every particle of silk from perfectly fresh corn, cut it from the cob, pack it in sterilized jars, press down well and fill them. Put these jars into the steam cooker and steam for two hours. If the corn shrinks fill three jars from the fourth and put them back into the

cooker and steam one hour longer. Seal carefully as directed for peas, as corn is one of the hardest vegetables to can. Watch carefully for three or four days, and if there is the slightest sign of fermentation, remove the lids, put them back into the cooker and steam thirty minutes again.

(Some, who do not have a steam cooker, set the jars in boiling water.)

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Recipe 6.

TOMATOES.

(Also Raspberries, Currants, Cherries, Pared Plums, Grapes, Soft Pears, Soft Peaches, Etc.)

Materials.	Measure.
Tomatoes	
Boiling Water	
Salt	

DIRECTIONS.

Select tomatoes perfectly fresh, firm and uniform in size to pass into the jars perfectly whole. Place a few tomatoes at a time in a wire basket and dip in boiling water to loosen the skins. Sterilize the jars and fill with tomatoes, being careful not to crush them. Add one teaspoonful of salt and

UTENSILS:

Steam Cooker	Wire Basket
Large Kettle	

fill to overflowing with boiling water. Screw the covers on tight at once, and stand in a kettle of boiling water, turning the burner out. Let stand until cold. Fruit such as raspberries, currants, cherries, pared plums, grapes, soft peaches and soft pears will keep nicely in this same way, using boiling syrup instead of boiling water.

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Recipe 7.

CANNED PINEAPPLE.

Materials.	Measure.
Ripe Pineapples ...	
Water and Juice ...	1 Pint
Gran. Sugar	1 Pint

DIRECTIONS.

Secure perfectly ripe fruit, and cut crosswise in slices from one-half to three-quarters of an inch thick, peel and remove eyes and any brown spots and pick into small pieces with fork, or cut in any desired shapes, using the silver knife for this purpose.

UTENSILS:

Sharp Butcher Knife	Fruit Jars
Vegetable Knife	Measuring Cup
Silver Knife or Fork	Steam Cooker
Stew Pan	Wooden Spoon

Fill the copper pan of the steam cooker with cold water, set the jars inside the cooker, put over the fire, bring the water to the boiling point and boil ten minutes. This is absolutely necessary for sterilization of the jars. In the meantime add the juice from the pineapple to the water and sugar, put this into the stew pan over the fire, stir until sugar is dissolved. Boil five minutes and skim. Remove one jar at a time from the cooker, fill with the pineapple and then to overflowing with the boiling syrup. Put those filled into the cooker, lay the cover on top, which has been dipped for a second time in boiling water, and steam fifteen minutes. Now remove each jar, lift off the cover and place again in boiling water while you fill the jar to overflowing with the remaining boiling syrup. Replace the cover quickly, sealing tight, and stand aside to cool. The next morning and for nearly a week, watch your fruit carefully to see if it is going to keep. The contents of every jar must be sterile (dead), one germ on the cover, in the jar or fruit will spoil the entire contents.

PRESERVING AND JELLY MAKING.

(Including Jams and Fruit Juices.)

“There is every kind of berry in my pail,
I wanted blue ones only,
But on this fruitful road I could not fail
To find all kinds of berries in my pail.”

In preserving, canning or jelly making, iron or tin utensils should never be used. The fruit acids attack these metals and give both bad color and taste to the fruit.

The kettle should be broad rather than deep, and this may be porcelain lined, enameled or aluminum. As in any other work, the proper tools or utensils are necessary for the best results in canning, preserving and jelly making, such as preserving kettle, steam cooker or large kettle, skimmer, colander, wire sieve, wooden spoon, measuring cup, sauce pan, scales for large fruits if possible, wooden masher, cheese cloth jelly bag and plenty of clean cloth or towels. The regular kitchen pans hold the fruit and sugar.

When the fruit is purchased, keep it where it will keep cool and free from dust or flies until ready to use. System will do much to lighten the work. Have the kitchen swept and dusted thoroughly with a damp cloth to keep down all dust and thus have less danger in keeping the fruit.

Have a kettle ready for sterilizing the jars and all necessary utensils and sugar at hand. Then with a moderate amount of fruit to put up at one time the work should be a pleasure.

To each quart of large fruit one pint of syrup is necessary for canning. Two-thirds of a pint of syrup for a quart of the small fruits. One pint of sugar and the same of water put over the fire, stir until the sugar is dissolved, bring slowly to the boiling point and boil five minutes or longer if desired richer. This makes a good syrup for all canned acid fruits.

A light syrup may be made from one pint of sugar and two pints of water boiled ten minutes for canning blueberries, and proceed precisely the same as for canning raspberries, cherries and currants.

Fruit syrups and fruit juices are two most desirable ways for the preservation of fruit, and are most desirable for delicious drinks, sauces, ices and ice cream. Pineapples, cherries, grapes, currants, oranges, lemons, raspberries and strawberries may all be used for this purpose. Be careful of too much boiling, as it destroys the color and flavor of the fruit juices or when made into syrup. It keeps well the entire year and should be made when fruits are seasonable and reasonable in price.

One recipe will answer for all fruit juices. They may be bottled with or without sugar. Currant juice may be sterilized and canned without sugar, making the jelly at any season of the year.

Use self-sealing bottles instead of cans.

The amount of sugar, when used for grape juice, cherries and plums is one-half pint to each quart of juice. Currants will require one pint of sugar to a quart of juice. I will give the recipe for Grape Juice and this will answer for all the given fruits as directed.

Recipe 1.**GRAPE JUICE.**

Wash the grapes and pick them from the stems. Put them into a preserving kettle—porcelain lined—crush a little, adding just enough water to prevent them from sticking. Cover and heat slowly until the grapes are soft and the juices well out. Turn into a double cheese cloth bag and drain over night. The next morning sterilize the bottles. Return the juice to the clean preserving kettle over the fire. Let come to a boil and skim. Repeat. Add the sugar and stir until dissolved. Let come to the boiling point, skim and rinse the bottles with a little alcohol, fill them and cork. Put them into the steamer or a kettle of hot water and boil them thirty minutes. Place on a wire cooler away from the draft to cool.

The only difference between the syrups and juices is that in the syrup more sugar is used.

Recipe 2.**BLACKBERRY JAM.**

Materials.	Measure.
Blackberries	1 Quart
Sugar	3 Cups

UTENSILS:

Sieve	Wooden Masher
Jelly Glasses	Measuring Cup
Porcelain Lined Kettle	Wooden Spoon

DIRECTIONS.

Heat the berries very slowly, then mash them through the sieve. Have the sugar heated in a moderate oven. Pour the blackberry juice and pulp into the kettle; bring to a boil and then add the sugar. Stir both together, boil very rapidly and watch carefully that it does not burn. Boil until it "sets or "wrinkles" when a little is

taken out in a dish and placed on ice.

If you do not wish the seeds removed from the berries put them at once into the kettle; stir and crush with a wooden spoon and boil thirty minutes, then add the sugar and proceed as above. Put in small tumblers and cover tightly.

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Recipe 3.**CURRENT JAM.**

Materials.	Measure.
Currents	1 Quart
Sugar	3 Cups

UTENSILS:

Porcelain Kettle	Jelly Glasses
Wooden Spoon	Measuring Cup

DIRECTIONS.

Wash the currants and pick them from the stems; then measure the currants and sugar and let stand over night. In the morning bring them to the boiling point, stirring almost continually until finished. Test this as you would for jelly by taking a little out

in a saucer and cooling on ice. If it congeals it is ready to pour into the jelly glasses and finish in the sunshine. Seal as you would jellies. Equal parts of raspberries and currants are a nice combination; and in the red

raspberry jam a half a cupful of currant juice to every quart of berries adds much to the flavor of the jam.

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Recipe 4.

RHUBARB JAM.

Materials.	Measure.	Weight.
Rhubarb		3 lbs.
Figs		$\frac{1}{2}$ lb.
Orange Peel		$\frac{1}{4}$ lb.
Grated Lemon and Juice	1	
Sugar		$2\frac{1}{2}$ lbs.

DIRECTIONS.

Cut the rhubarb in inch length pieces. Take ordinary dried figs and cut in medium sized pieces; shred the orange peel and add the juice and grated rind of the lemon. Put a layer of rhubarb, figs, orange peel, lemon and sugar and repeat these layers until all is used; cover and let stand over night. In the morning boil until thick, about one hour will do. Put away in jelly glasses. This is delicious and very nice for sweet sandwiches for afternoon tea.

UTENSILS:

Paring Knife	Lemon Squeezer
Scales	Jelly Glasses
Porcelain Lined Kettle	

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Recipe 5.

STRAWBERRY JAM.

(Also Black and Red Raspberry Jam.)

Materials.	Measure.
Strawberries	4 Quarts
Sugar	2 Quarts

DIRECTIONS.

Put the berries into the colander and dip it up and down once or twice in cold water. Drain, and hull them. Measure half the berries and empty them into the kettle, placing over a moderate fire to heat, mashing the berries well. Do not let them boil, but mash and heat until all the juices are well started. Measure and for

UTENSILS:

Porcelain Lined Kettle	Jelly Glasses Colander
Wooden Masher	Silver Tablespoon
Measuring Cup	

every pint of this pulp add one pound of sugar. Put both together into the kettle and bring quickly to the boiling point, boiling rapidly and skimming until perfectly clear, which will take about fifteen minutes from the time it begins to boil. Now add the remaining two quarts of whole strawberries. Bring to the boiling point again, boil five minutes. If you wish it cooked down very thick carefully skim out the berries and cook the juice from

five to fifteen minutes. Unite the berries with this juice and put by spoonfuls into the hot sterilized tumblers and finish in the sunshine where it is free from dust, or with glass over the tops, and seal as directed.

Strawberries and grated pineapple make a delicious combination.

Black or red raspberries may be prepared in precisely the same manner as the strawberries.

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Recipe 6. SPICED CURRANTS.

Materials.	Measure.	Weight.
Currants	1 Quart	
Gran. Sugar		3 lbs,
Vinegar	1 Pint	
Ground Cloves	1 Tablespoonful	
Ground Cinnamon..	1 Tablespoonful	
Ground Allspice ...	1 Tablespoonful	

DIRECTIONS.

Wash and stem the currants, then measure and arrange proportions as given. Put the vinegar into the kettle and then the sugar, stirring until well dissolved. Add the fruit and spices and boil two hours. This may boil more slowly than for jams, but must be watched and stirred often so that it does not burn nor stick.

Ripe cherries and gooseberries are delicious spiced in this manner and all are nice to serve with cold meats.

UTENSILS:

Porcelain Lined	Tablespoon
Kettle	Scales
Measuring Cup	Wooden Spoon

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Recipe 7. QUINCE PRESERVES.

Materials.	Measure.
Ripe Quinces	
Sugar	

DIRECTIONS.

Wash and wipe the quinces. Pare, core and cut into slices, or they may be quartered. Be sure to throw each piece into cold water to prevent discoloration. Put them into the kettle and barely cover with boiling water. Simmer until tender; skim out the fruit very carefully and add the parings

UTENSILS:

Paring Knife	Scales
Porcelain Lined	Measuring Cup
Kettle	Skimmer

but not the cores to the liquid; cover and simmer one hour. Strain and to every pint of this juice allow one pint of sugar; stir until dissolved. Bring quickly to the boiling point and boil hard (if there is a quart of juice) fifteen minutes, skimming well. Now put in the quinces and boil until clear and red. It is better to keep them covered if you wish them bright in color. When the quinces are done skim out into hot sterilized jelly glasses. Boil

the juice if necessary a little longer to become thick; pour this over the fruit and stand in the sunshine to finish. Seal as directed.

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Recipe 8. SAN DIEGO ORANGE MARMALADE.

Materials.	Measure.
Oranges (Navel)...	6
Lemons	3
Water	7 Cups
Sugar	

DIRECTIONS.

Cut off the ends of the oranges and lemons and throw away. Peel thin oranges and lemons round and round like an apple and then cut with shears very fine. Remove the white skin and cut the pulp into fine pieces. Cover the pulp and shredded peel well with cold water and let stand 12 to 24 hours. Drain, add the water and cook until reduced one inch or until the rinds are tender. Add equal amount of sugar and cook until it jellies.

UTENSILS:

Large Bowl	Paring Knife
Shears	Wooden Spoon
Kettle	Glasses
Measuring Cup	

Recipe 9. SMALL FRUIT JELLY.

Materials.	Measure.
Currant Juice	1 Quart
Sugar	1 Quart

DIRECTIONS.

Select the currants and pick over as previously directed for small fruits. Put them into the preserving kettle. Do not stem them but mash well. Place over the fire until heated and the juices well started. Put into the jelly bag and drain over night. The next morning, wash and put the glasses into the kettle with cold water and bring

slowly to the boiling point ready for use. Measure the juice and for each pint or quart of juice an equal amount of sugar. Measure the juice into the kettle, put over the fire, bring to the boiling point and boil it twenty minutes, skimming often. After the juice has been boiling for about ten minutes, measure the sugar into a pan, place in a moderate oven and heat, being careful not to melt it.

When the juice has cooked the required time, add the sugar, stir until all is dissolved. If your fruit was not over-ripe and your work carefully done, the jelly will be ready to strain at once into glasses; if not, it must be cooked longer. Set in the sunshine to finish. Cover with melted paraffine, label and set away in a dark, cool closet. Grapes, raspberries and blackberries

are made in the same manner. A mixture of fruit juices always makes a pleasant variety.

For red raspberry jelly add one-third currant juice. For crab-apple jelly the addition of wild plum juice improves the flavor, or a stick of cinnamon, or even the native grape juice. Under-ripe grapes make an especially attractive jelly. Black raspberry and crab-apple, and grape and crab-apple make a nice combination.

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Recipe 10. APPLE JELLY, QUINCES OR CRAB-APPLES.

Materials.	Measure.
Lady Blush or Pippin Apples	
Juice from Apples...	1 Quart
Gran. Sugar	3 Cups

UTENSILS:

Large Kettle	Porcelain Kettle
Jelly Bag	Paring Knife
Glasses	Skimmer
Measuring Cup	Strainer

DIRECTIONS.

Wash the fruit, remove the cores and cut the apples into small pieces; put them into a large porcelain lined kettle and barely cover with cold water. Cover and boil gently until the fruit is soft and the juice is well started. Pour into the jelly bag and drain over night. The next morning wash and prepare the glasses for sterilizing as before directed. Measure the juice. Put it into

the porcelain lined kettle, bring to the boiling point and boil twenty minutes. Have measured and heated three-fourths the amount of sugar that you had juice. Add the sugar to the juice as previously directed, stirring until the sugar is dissolved and it should be ready to strain at once into the glasses. If you are not quite sure; take out a little in a dish and try it by standing on ice. If it congeals or wrinkles on the top it is ready to put at once into glasses. Finish as previously directed for jellies.

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Recipe 11. MIXED JELLY.

Materials.	Measure.
Equal portions of Cherries, Red Raspberries, Currants, Strawberries, Sugar	

UTENSILS:

Jelly Bag	Porcelain Lined
Masher	Kettle
Strainer	Glasses
Measuring Cup	

DIRECTIONS.

Stone the cherries, being sure to save all juice that escapes. Mix all the fruits together and mash well. Heat only until the juices are well started and then turn the jelly bag and squeeze thoroughly. Put the juice into another jelly bag and drain without squeezing. Measure the juice and to every pint allow one pound or two cups of sugar. Turn the juice into

the kettle and if there is one quart of juice boil twenty minutes and finish the same as other jellies in preceding recipes.

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PICKLING.

(Including Watermelon, Peach, Pear, Tomato, Cucumber and Oiled Pickles and Chow Chow, Chili Sauce and Relishes.)

"Prove all things; hold fast that which is good."

(All measurements level.)

Sweet pickles are made from all fruits that can be preserved such as citron, watermelon rind, crab-apples, peaches, pears, cucumbers and many others.

Spiced fruits from currants and gooseberries are delicious with cold meats.

Good cider vinegar only should be used for pickling, brown or white sugar and the very best spices which can be bought. The housekeeper has every opportunity now under the Pure Food Law of knowing whether she has genuine spices or ground leaves. There is, or has been, so much adulteration in spices that I make this appeal to housekeepers to not buy cheap, inferior spices. The success of pickling where spices are used depends mainly upon their purity and flavor.

The syrup for the sweet pickles should be rich and thick and sufficiently cooked to keep without being sealed.

Do not use preservatives or coloring matter of any kind. Do your pickling carefully, not too much at once. Have variety rather than quantity, then there will be no failures.

Recipe 1. WATERMELON, PEACH OR PEAR PICKLES.

Materials.	Measure.	Weight.
Ground Allspice	2 Teaspoonfuls	
Cinnamon	2 Teaspoonfuls	
Cloves	1 Teaspoonful	
Mace	1 Teaspoonful	
Light Brown Sugar		4 lbs.
Cider Vinegar	1 Pint	
Green Ginger Root..		½ oz.
Watermelon Rind ..		7 lbs.

DIRECTIONS.

Divide the spices in three parts and tie up in muslin bags. Put the sugar and vinegar into the kettle; add the spice bags and ginger root broken into small pieces. Bring to a boil and put in the watermelon rind cut in about two-inch-length pieces, having soaked these in a little weak alum water over night. Bring to a boil once more, remove from fire, cover and let stand in a cool place twenty-four hours. Then take out the melon rind and let the syrup again come to a boil. Add the

UTENSILS:

Porcelain Lined	Teaspoon
Kettle	Jars
Scales	Paring Knife
Measuring Cup	

rind again and set away for another twenty-four hours. Do this daily for one week. The last time, bring all to a boil and simmer very gently ten minutes and put away in jars. Do not think any part of this too much trouble as results are good and you will feel well repaid for the effort, which really takes only a few minutes each day.

For pickling peaches use a fine freestone and prepare as for canning, except do not cut in halves. Pears are cut in halves.

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Recipe 2.

GREEN TOMATO PICKLES.

Materials.	Measure.	Weight.
Green Tomatoes ...	1 Peck	
Whole Allspice		1 oz.
Sliced Onions	1 Dozen	
Black Pepper		1½ ozs.
Ground Mustard ...		¼ lb.
Whole Cloves		1 oz.
Mustard Seed		1 oz.
Cider Vinegar		

DIRECTIONS.

Wash the tomatoes and carefully remove any spots on them. Slice, and place first a layer of tomato, then one of onion, then salt and repeat until all are used. Cover and let stand over night. In the morning drain off all the liquor or juice. Put them in the porcelain lined kettle with all the ingredients, cover with vinegar and simmer gently for twenty minutes. Put away in stone or glass jars.

UTENSILS:

Large Bowl or	Stone or Glass Jars
Crock	Porcelain Lined
Paring Knife	Kettle
Scales	

Mrs. Kirk's Card Index Cooking Recipes.

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Recipe 3.

CHOW CHOW.

Materials.	Measure.	Weight.
English Mustard ...		½ lb.
Tumeric		½ oz.
Mustard	2	Tablespoonfuls
Cider Vinegar	½	Gallon
Brown Sugar	1	Cup
Olive Oil	½	Cup
Cauliflower	1	Head
Tiny Cucumbers ...	1	Quart
Button Onions	1	Quart

DIRECTIONS.

Cover the cucumbers with strong salt water and let stand over night. Boil the cauliflower and onions separately. Put the vinegar into the kettle. Mix the mustard and tumeric together and moisten them with a little cold vinegar, then stir them into the hot vinegar and stir continuously until it begins to thicken; then add the remaining ingredients and pour this while hot over the well drained vegetables. Seal in jars.

UTENSILS:

Two Stew Pans	Large Bowl
Porcelain Kettle	Wooden Spoon
Measuring Cup	Tablespoon
Scales	Jars

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Recipe 4.

CUCUMBER SAUCE.

Materials.	Measure.	Weight.
Large Cucumbers...	1 Dozen	
Onions	$\frac{1}{4}$ Peck	
Mustard Seed		2 oz.
Small Red Peppers..	1 Dozen	
Celery Seed	1 Tablespoonful	
Butter	$\frac{3}{4}$ Cup	
Sugar	$\frac{1}{2}$ Cup	
Salt	1 Tablespoonful	
Ground Mustard ...	1 Tablespoonful	
Eggs	4	
Cream	1 Cup	
Vinegar	$1\frac{1}{2}$ Pints	

DIRECTIONS.

Chop the cucumbers (without paring) and onions fine in the food chopper. Put alternate layers of cucumbers and onions (salting each layer) into the crock and press over night with heavy weights. In the morning drain, scald in good cider vinegar (enough to cover), then add red peppers chopped fine, mustard and celery, stirring thoroughly, to which you will add the following dressing: Cream the butter and sugar and add the remaining seasonings, beating in the eggs one at a time; lastly add the cream. Have ready the vinegar boiling hot, stir all into it. Allow this dressing to just come to the boiling point, then stir this into the cucumber mixture and it is ready to put into jars.

UTENSILS:

Food Chopper	Measuring Cup
Crock	Tablespoon
Wooden Spoon	Stew Pan
Mixing Bowl	Porcelain Lined Kettle

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Recipe 5.

OILED PICKLES.

Materials.	Measure.	Weight.
Small Pickles	100	
Ground Mustard ...		$\frac{1}{4}$ lb.
Black Pepper	1 Teasp'ful	
Whole Mustard ...		$\frac{1}{4}$ lb.
Small Onions	1 Quart	
Olive Oil	1 Pint	
Celery Seed		2 oz.
Cider Vinegar	2 Quarts	

DIRECTIONS.

Wash and with a cloth rub the cucumbers well; peel the onions and slice both in thin slices. Put a layer of cucumbers and one of onions, then a good sprinkling of salt, then repeat the layers and salt, continuing until all is used. On top place a weight and stand over night. In the morning, drain. Put a tablespoonful of powdered alum in sufficient cold vinegar to cover the pickles and let them stand until afternoon. Drain again. Do not waste this vinegar as it can be used for other

pickles. Put the cucumbers and onions into jars, mix all the remaining ingredients together, gradually adding the oil and vinegar and pour over them. Seal.

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Recipe 6.

CHILI SAUCE.

Materials.	Measure.
Ripe Tomatoes 8	Quarts
Grated Horseradish 1½	Cup
Salt 2½	Cup
Celery Seed 2	Tablespoonfuls
Brown Sugar 1	Cup
Ground Allspice ... 1½	Tablespoonfuls
Mace 1	Teaspoonful
White Pepper 1	Tablespoonful
Small Red Peppers.. 2	
Vinegar 1	Quart
Large Onions 3	

DIRECTIONS.

Peel the tomatoes, cut them in halves and remove all the seeds possible; chop fine. Chop fine the onion and peppers. Mix all the ingredients well together and put in a porcelain lined kettle and simmer slowly for 2½ hours, then put into the bottles, cork and seal.

UTENSILS:

Paring Knife	Wooden Spoon
Colander	Wide Mouthed
Food Chopper	Bottles
Porcelain Lined Kettle	Sealing Wax
	Corks

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Recipe 7.

PEPPER RELISH.

Materials.	Measure.
Red Sweet Peppers. 6	
Green Sweet Peppers 6	
Onions 6	
Small Cabbage 1	
Sugar 1	Cup
Salt 2	Tablespoonfuls
Vinegar 1	Quart

DIRECTIONS.

Chop all the ingredients, using the medium sized cutter. Put into the bowl, pour boiling water over all and squeeze dry. Have the vinegar hot with the sugar and salt in the preserving kettle. Mix all well together, let come to a boil, cool and seal in jars.

UTENSILS:

Food Chopper	Large Bowl
Preserving Kettle	Fruit Jars

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Recipe 8.

GENUINE LONGFELLOW PICKLES.

Materials.	Measure.
Green Tomatoes ... 1	Peck
Onions 1	Dozen
Green Peppers 4	
Sugar 2	Cups
Ground Cloves 1	Tablespoonful
Ginger 1	Tablespoonful
Cinnamon 1	Tablespoonful
Allspice 1	Tablespoonful
Mustard Seed 1	Tablespoonful
Celery Seed 1	Tablespoonful
Cider Vinegar	
Salt ¾	Cup

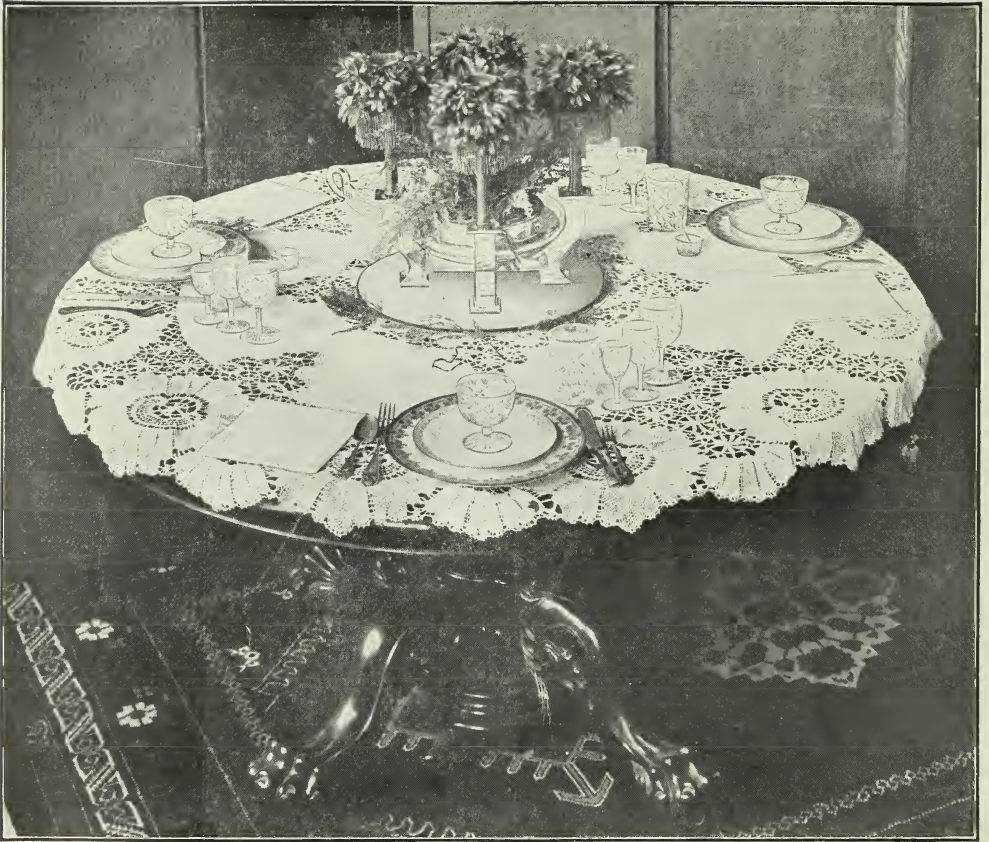
DIRECTIONS.

Wash and slice the tomatoes, onions and peppers into a large bowl and sprinkle with salt. Stand over night; the next morning drain, and put into a preserving kettle with the spices and cover with good vinegar; cook until tender. Put away in jars, being careful not to break the slices of tomatoes.

UTENSILS:

Vegetable Knife	Measuring Cup
Tablespoon	Preserving Kettle
Large Mixing Bowl	Glass Jars

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(Photographed especially for this book.)

NO. 5. TABLE SET FOR A DINNER WHERE THE FIRST COURSE IS A
FRUIT COCKTAIL.

This is the same as No. 4 except change in Center Decorations. (See description of No. 4.)

THE PEOPLE'S HOME RECIPES FOR EVERY-DAY USE.

"Simple diet is best for many dishes bring many diseases."

The recipes in this department have been gathered from many parts of the world and have all been carefully corrected and arranged with the view of making them the favorite recipes for every-day use in the home. Though the work is complete and covers every subject, yet special attention has been given to the simple and inexpensive dishes. This department will be found thoroughly practical and entirely different from all other cook books. The aim has been to give full and complete directions with each subject, not only that the experienced cook may use it as a guide, but also that the young and inexperienced housewife can make a practical use of the book.

BREAD MAKING.

(Including Recipes and Directions for Making White Bread, Whole Wheat Bread, Oatmeal Bread, Brown Bread, Graham Bread, Corn Bread, Currant Bread, Cornish Bread, Salt Rising Bread, Gingerbread, Etc. Also Recipes for Making all Kinds of Yeast and Baking Powder.)

"Give us this day our daily bread."

"In bread making, as in baseball, there is nothing like a good batter in the hour of knead."

As "bread is the staff of life," it is important that every housewife be well skilled in the art of making good bread. Spongy sweet bread, light crisp rolls or flaky biscuits make the plainest meal appetizing while the most luxurious dinner is a failure without them. Indeed the health and comfort of the family is often determined by the quality of the home made loaves and it is an old saying that the way to a man's heart is through his stomach. Then why should not every young woman learn this art? There is no greater accomplishment. In bread making three things are important—good flour, good yeast and good care.

FLOUR.

There is no accurate rule by which the grade of flour can be determined by examination and it is well to stick by some tried brand which has been used with success. A brand which is liked by one will be a failure in the

hands of another. Good flour has a cream-white tint and one should **never** buy that which has a blue-white tinge. Poor flour often has a dingy appearance as though mixed with ashes, is not adhesive, and may be blown about easily. Good flour will adhere to the hand when pressed and will show the imprint of the lines of the skin. Flour should always be thoroughly sifted. A single speck of mold will often spoil the bread. Flour should be bought in small quantities, kept dry, cool, and beyond the reach of rats, mice and insects. The small moth does much damage. Remember that all kinds of flour and meal, except buckwheat and graham, need sifting. It is well to have a pail with a tight-fitting cover in which to keep flour after sifting until it is needed.

YEAST.

After flour, the yeast is the most essential element in bread. Most people prefer yeast bread but there are some who prefer "salt-rising" bread. Many of the dry hop yeasts are good if available. Many use bakers' yeast and buy just what they need each baking. There are two advantages in using potato yeast—bread made from it will not dry out so quickly and there is not the danger that too much will spoil the flavor of the bread.

THE SPONGE.

Sponge is made from warm water or milk, yeast and flour. Some add mashed potatoes. A pint of water or milk should be used for each quart of sifted flour. The milk or water (wetting) should be at blood heat. If milk is used it should be new and first scalded to prevent souring, then cooled to blood heat. The bread will be coarse if the "wetting" is too hot. When water is used, the addition of a tablespoonful of either butter or lard will make the bread more tender. Bread made from water will keep longer and has more of the sweet taste of the wheat than that made from milk but is not so tender and nutritious. When mixed with milk it requires more flour and more kneading. In the summer the sponge should not be set before eight or nine o'clock in the evening. The sponge may be made with cold water in hot weather. In winter the batter should be mixed with water or milk at blood heat. Test it with the finger and make it as warm as can be borne; stir in the flour which will cool it enough for the yeast; cover it closely with several layers of blanket (it is best to have it in a large jar or crock) and place in a warm and even temperature. For four ordinary sized loaves, three pints of wetting and a teacup of yeast will generally make enough sponge. In making sponge, the yeast should always be added last and the sponge should not be hot enough to scald. The temperature for rising should be eighty or ninety degrees. A more uniform heat can be maintained in a crock or stone jar than in tin, hence sponge should never be set in tin.

MIXING AND KNEADING.

Early the next morning measure and sift the flour and if the weather is cold both the flour and the sponge should be warmed. A large tin dish pan with a tight fitting cover is excellent for mixing dough. It should be scalded each time it is used. Put the flour into it and for four loaves add two level teaspoonfuls of salt. Mix well but be careful not to get the dough too stiff, then turn out on the bread board; knead without stopping until the dough sticks to neither the hands nor the board. This will require from forty-five

minutes to an hour. All flour to be used should be put in at the first molding and it should be kneaded the longest at this time. Use just as little flour as necessary to prevent sticking and remember that any pause in the kneading will injure the bread. There are different ways of kneading and no precise directions can be given. Experience is the best guide. When through with the kneading, form the dough into a large loaf and again place it in the bread pan which has been sprinkled with flour. Either sprinkle the loaf with flour or grease it over with salted butter or lard, cover it closely and set in a warm place for from one to two hours, or until it rises to twice its original size; then knead down in the pan, but bread should be kneaded but little at the second molding. Form into loaves and put each into a well greased baking pan, grease the tops of the loaves with salted butter or lard and set to rise. The loaves should be molded perfectly smooth with no lumps or flour adhering to the sides. The loaves should rise in the pans for from fifteen minutes to an hour, much depending upon the temperature. Before it is entirely through rising or when it has risen enough to seam or crack it should be placed in the oven. Bread should ferment but twice as the third fermentation spoils it. This may be remedied by adding a teaspoonful of soda for each four quarts of flour but the bread will not be so good nor so healthful. Salt should always be added to bread and biscuit but never salt sponge. A small quantity of white sugar improves bread dough, providing the yeast is doubtful. Bread should be mixed as soft as it can be handled but if "new process" flour made from spring wheat is used the dough must be much harder than when winter wheat is used. Try to get the loaves into the pans for the last rising rather soft. Pans with high sides are the best for they keep the bread from spreading apart or running over the sides.

To have good baking powder biscuit the dough must be kept so soft that you can just get it into the pan. They must be baked quickly in a very hot oven. Never roll the dough thinner than an inch.

BAKING.

A moderate, uniform heat is very necessary in baking bread. If the heat is too great a hard crust is quickly formed before the bread has expanded sufficiently and it will be heavy. If the bare hand and arm can be held in the oven not longer than enough to count twenty moderately, it is hot enough. Or, it may be tested by placing a small quantity of flour in the center of the oven on an old piece of crockery; if it browns in one minute the heat is right.

To tell when the bread is done break the loaves apart and press gently with the finger; if elastic, it is done, but if clammy, it needs to be returned to the oven. Or the loaves may be tested with a broom splint. If nothing adheres when it is withdrawn the bread is done. It generally takes from forty-five minutes to an hour for the baking. As soon as removed from the oven the loaves should be taken from the pans and the entire outside greased with melted butter. They should then be tilted on edge to allow a free circulation of air, though some have success by wrapping the bread with cloth as soon as it is taken from the oven. Do not place warm bread next to wood or it will have a bad taste. Lay a cloth upon the table and put the bread on that. Pans should be greased very lightly for bread. If the bread is baked too hard wrap it in a wet towel and cover with another dry towel.

Remember that yeast must never be used if sour; the temperature where

the bread is set to rise must not be hot enough to scald; and the temperature of the oven must be moderate and uniform.

Heat the bread knife and you will prevent crumbling in cutting warm bread.

RECIPES FOR MAKING YEAST.

1. **Starter Yeast.**—In the evening boil enough potatoes to make one pint when mashed very fine. Save potato water and add enough more water to make 3 pints, then add 1 tablespoonful salt and $\frac{1}{2}$ cup sugar and 1 cake compressed yeast, put in the potatoes and stir well, cover and let rise over night. In the morning save 1 pint for next baking or make fresh each time, as desired; mix stiffer with flour than with other yeast.

2. **Potato Yeast.**—In the morning, boil and mash three potatoes. Add $\frac{1}{4}$ cup of sugar and $\frac{1}{2}$ cup of flour and $\frac{1}{2}$ tablespoonful of salt; stir well together. Pour over this mixture $\frac{1}{2}$ pint of boiling water and stir it; then add $\frac{1}{2}$ pint of cold water and stir that; then $\frac{1}{2}$ cup of yeast and keep it in a warm place. When it is risen well and rounds up to the top of the dish stir it down. Do so several times during the day. Then it may be strained and put into a jar or jug, and kept in a cool place. The bread made with this may be made with milk.

3. **Beer Yeast.**—For 1 gallon of yeast, take 12 medium-size potatoes, pare and boil them until done. With the water off these, scald 3 heaping tablespoonfuls of flour, 3 tablespoonfuls of sugar, and 3 scant tablespoonfuls of salt. Mix the potatoes, mashed, with this, then fill gallon with cold water. When cold enough, add 1 cake of magic yeast. Let stand in cool place. Take 1 pint of mixture for 1 loaf of bread.

4. **Hop Yeast.**—Take 1 quart of hops, boiled and strained, 1 cup of sugar, $\frac{1}{2}$ cup of salt, $\frac{1}{2}$ cup of lard, 2 large tablespoonfuls of ginger, 4 potatoes boiled and mashed and enough yeast to raise it. Let stand over night, then mix enough flour and corn meal to make crumbly.

BAKING POWDERS.

1. **Baking Powder.**—Four ounces tartaric acid, 5 ounces bulk soda, 1 pint flour; sift all together four times.

2. **Baking Powder.**—A scant pint of flour, $\frac{1}{2}$ pound of soda and 1 pound of best cream of tartar. Sift together eight times through a flour sieve. Fill tin boxes and cover tightly.

The lady sending this recipe says she has used it for years and that it never fails. It is pure and the money you save will be a surprise to you.

3. **Baking Powder.**—Six ounces cream of tartar, $2\frac{2}{3}$ ounce bi-carbonate of soda, $4\frac{1}{2}$ ounces of flour. It is claimed this is the recipe from which is made one of the most popular brands of baking powder on the market.

BREAD RECIPES.

1. **Bread.**—Cook potatoes enough to make one cup when mashed; use the water the potatoes were boiled in and add enough lukewarm water to make three pints; add one tablespoonful of salt and one tablespoonful of sugar, one-half cup of liquid yeast and thicken quite stiff with flour. Let sponge rise all night in warm place; in the morning add flour enough to make stiff. Put in a warm place until light. Knead into loaves, using some lard on the molding board but no flour. Let rise and bake.

2. **Whole Wheat Bread.**—In the evening boil enough potatoes to make one pint when mashed fine. Save three pints potato water and add to it the potatoes, one-half cup sugar and one tablespoonful of salt; add one cake compressed yeast, stir well and let rise over night. In the morning add enough warm water to make required number of loaves; add a little more salt and a little lard. Stiffen with whole wheat flour and add about two quarts white flour, work down twice, then mould into loaves, let rise and bake one hour.

3. **Entire Wheat Bread.**—Sift some salt and three teaspoonfuls baking powder with three cups entire wheat flour, then add two cups milk and a scant one-quarter cup of molasses.

4. **Salt Rising Bread.**—In the evening take three tablespoonfuls of corn-meal, one-half spoonful of sugar, one-half spoonful of salt, one-half of a raw potato scraped fine, and scald with enough water to make quite a thin mush; set in a warm place until morning; then take a pint of flour, one-half teaspoonful of salt, and enough lukewarm water to make a thick batter; then add the mush made the night before, and stir briskly for a minute or two. Set in warm place; when light, stir down and let rise a second time. When risen, put four or five quarts of flour in a bread bowl, make a hole in the center, and pour in three pints of warm water. Then add your rising; knead, and when light mix in loaves. When risen to top of pan, bake. This will make three loaves.

5. **Oatmeal Bread.**—Scald one cup of rolled oats with one pint of water and let stand until lukewarm; add to this a little salt, one-half cup of Orleans molasses and one-half cake of compressed yeast, which has been previously dissolved in one teacup of lukewarm water. Add enough white flour to make a stiff dough and knead thoroughly. Let stand over night and the first thing in the morning cut and slash with a knife until the dough is freed from air; when risen again, form into two loaves, place in baking pan and let rise until the size is about double, and then bake.

6. **Spinster's Bread.**—Two eggs, one quart of flour, two tablespoonfuls of shortening, one teaspoonful of salt, one teacupful of yeast sponge, one cup of sweet milk. Mix into a soft dough, let rise; mould into loaves, let rise until light, then bake.

7. **"Hotel Berry" Brown Bread.**—Use one and one-half pints of butter-milk, one-half pint of molasses, two teaspoonfuls of soda, one tablespoonful of lard and enough Graham flour to make a batter that will just drop from a spoon. Put in a very hot pan and bake in a hot oven.

Those who have stopped at the Hotel Berry at Athens, Ohio, have eaten this delicious brown bread. We are exceedingly fortunate in securing this recipe.

8. **Boston Brown Bread.**—Two cups of Graham flour, 2 cups of white flour, 1 cup of corn meal, 1 tablespoonful of butter, 2 eggs, 1 cup of molasses, 1 box of raisins, 1 large spoonful of sugar, $2\frac{1}{4}$ cups of buttermilk, 2 teaspoonfuls of soda. This recipe comes from the Mercer Sanitarium.

9. **Old Fashioned Brown Bread.**—Put 1 pint of yellow corn meal in a mixing bowl and scald it with just enough boiling water to moisten it. Let this stand about 10 minutes, then add enough cold water to make a soft batter. When lukewarm add $\frac{1}{2}$ cup molasses, $\frac{1}{2}$ cup liquid yeast, 1 teaspoonful soda, $\frac{1}{2}$ teaspoonful salt and 1 pint warm flour. Stir well and let rise over night. Next morning stir it down again and put into well greased tins to rise. Bake in a moderate oven 2 hours.

10. **Steamed Brown Bread.**—One cup of corn meal, 1 cup of flour, 2 cups of graham flour, 2 eggs, 1 cup of molasses, 1 teaspoonful of soda. Wet this mixture with sweet milk to make a thin batter, steam 3 hours.

11. **Graham Bread.**—One cup of potato yeast sponge, 3 (iron) tablespoonfuls of molasses, 1 tablespoonful of butter, 1 teaspoonful of salt, $1\frac{1}{2}$ cups of graham flour, $1\frac{1}{2}$ cups of white flour. Stir well together at night; let stand until morning, or until light and then put in a pan and let rise again; then bake 45 minutes.

12. **Raised Graham Bread.**—To 3 pints of light bread sponge add $\frac{1}{2}$ cup melted butter or lard, 2 tablespoonfuls sugar and enough graham flour to make a thick batter. Put into small greased tins, let rise and bake slowly. This is enough for three loaves.

13. **Steamed Graham Bread.**—To 2 cups of buttermilk add 2 large tablespoonfuls sugar, 1 teaspoonful soda, 3 cups flour and a pinch of salt; steam $1\frac{1}{2}$ hours and bake until light brown. If wished, a little less graham flour may be used and a little white flour added.

14. **Corn Bread.**—One tablespoonful of sugar, 1 egg, 1 teaspoonful of salt, 1 tablespoonful of melted butter or lard, 2 cups of buttermilk, 1 level teaspoonful of soda dissolved in a little of the milk; $\frac{1}{2}$ cup of flour. Thicken with meal and bake in a greased pan.

15. **Katahdin Corn Bread.**—One and one-half cups of sweet milk, 1 or 2 eggs, 3 scant cups of flour, $1\frac{1}{4}$ cups of cornmeal (granulated); 1 large spoonful of granulated sugar, 3 heaping teaspoonfuls of baking powder, $1\frac{1}{2}$ teaspoonfuls of salt, 4 tablespoonfuls of melted butter. Beat egg well, stir in the milk; sift flour, baking powder, meal, salt and sugar together, and stir slowly in egg and milk; add melted butter and beat well. Bake $\frac{1}{2}$ hour in hot oven.

16. **Fried Bread.**—Cut dry bread into small pieces and moisten with a little hot water. Take 4 eggs for about 3 pints of bread. Beat eggs and stir in bread. Fry in butter or lard. Very nice when eaten with syrup.

17. **Currant Bread.**—Take bread dough when ready for pans. For each loaf wanted take $\frac{1}{2}$ box of currants, 1 cup of sugar and lard the size of an egg. Use more flour if needed to make stiff. Mix into loaves and let rise until light. Bake in a slow oven from 1 to $1\frac{1}{4}$ hours.

18. **Cornish Bread.**—One cup of sugar and 1 tablespoonful of lard; pour a cup of boiling water over a pinch of saffron and when a little cool strain and pour into the bread sponge; wash $\frac{2}{3}$ cup of currants and add to the mixture; make as other bread. This is for four loaves.

19. **Gingerbread.**—One cup molasses, 1 cup butter or $\frac{1}{2}$ cup each of butter and lard, 1 cup sour milk, 1 good teaspoonful of soda or a little more, 1 teaspoonful ginger, 1 egg, flour enough to make a nice batter; bake in a quick oven.

20. **Soft Gingerbread.**—One cup of sour milk to 3 cups of sugar, 1 cup molasses, 2 teaspoonfuls of cinnamon, 1 teaspoonful of ginger, 1 teaspoonful of baking soda, 1 tablespoonful of vinegar, 2 tablespoonfuls of lard, pinch of salt, 2 cups of flour; mix molasses, sugar and milk; sift flour and spices together; dissolve soda in vinegar; stir the lard in boiling hot at the last.

21. **Eggless Gingerbread.**—One-half cup of brown sugar, $1\frac{1}{2}$ cups of molasses, $\frac{1}{2}$ cup sweet milk, $\frac{1}{2}$ cup butter, one teaspoonful soda, 1 teaspoonful allspice, $\frac{1}{2}$ teaspoonful of ginger, 3 cups of flour.

LIGHT BREADS.

(Including Rolls, Biscuits, Sandwiches, Cookies, Fritters, Doughnuts, Gems, Muffins, Waffles, Corn Cake, Buns, Dumplings, Crullers, Jumbles, Toasts, Crackers, Rusks, Scotch Scones, Griddle Cakes, Etc.)

“O, weary mothers mixing dough,
Don't you wish that food would grow?
Your lips would smile I know to see
A cookie bush or a pancake tree.”

ROLLS.

1. **Rolls.**—Scald 1 pint of sweet milk and stir into it a lump of butter the size of an egg, and $\frac{1}{2}$ cup of sugar; when cool stir into this two quarts of flour, a small cup of good yeast and 1 teaspoonful of salt, and set to rise over night or until it is very light; then knead and let rise again; cut the rolls $\frac{1}{2}$ inch thick; shape round; spread over each a little melted butter and double over so the roll is a half circle. Place close in the pan; let rise again very light and bake.

2. **Parker House Rolls.**—Scald 1 pint of milk and when lukewarm put in $\frac{1}{2}$ cup of butter or lard, $\frac{1}{2}$ cup of sugar, and $1\frac{1}{2}$ teaspoonfuls of salt. When cool, thicken as bread sponge and put in $\frac{3}{4}$ of a cake of yeast. Let rise over night; then mix but do not make it as thick as bread dough; let rise again; then knead and roll in sheets; cut with biscuit cutter; butter the surface and fold; let rise and bake.

3. **Astor House Rolls.**—One pint of sweet milk boiled, and while still warm put in a lump of butter the size of an egg, a little salt, two tablespoonfuls of sugar and $\frac{1}{2}$ cake of compressed yeast; when light mold 15 minutes, let rise again, roll out and cut in round cakes; spread each half with butter and fold over on the other half; put into pans and when light bake in a quick oven.

4. **Cinnamon Roll.**—Take a small loaf of light bread dough, 1 tablespoonful of lard, sweeten, roll thin, spread with butter, sprinkle with sugar and cinnamon, and roll up in loaf; when light, glaze with beaten egg. Bake in a moderate oven.

5. **French Rolls.**—Rub 2 ounces of butter and the well-beaten whites of three eggs into one pound of flour; add a tablespoonful of good yeast, a little salt and enough milk to make a stiff dough; cover and set in a warm place till light; cut into rolls and dip the edges into melted butter to keep them from sticking. Bake in a quick oven.

BISCUITS.

“Keen appetites and quick digestion wait on you and yours.”

1. **Soda Biscuit.**—Sift a level teaspoonful of soda and $\frac{1}{2}$ teaspoonful of salt with 1 quart of flour and rub into it a piece of lard about the size of a small egg and then add a pint of sour milk. Bake in a quick oven.

2. **Breakfast Biscuit.**—Take 1 pint of sweet milk, $\frac{1}{4}$ cup melted lard or butter, a little salt, 1 tablespoonful baking powder and flour enough for a stiff batter. Drop from the spoon into greased tin and bake in a hot oven.

3. **Southern Beaten Biscuit.**—One quart of flour, a pinch of soda the size of a pea, $\frac{1}{2}$ cup of sweet milk, $\frac{1}{2}$ cup of ice water, 1 teaspoonful of salt, 2 heaping tablespoonfuls of lard; mix to a stiff dough and beat until it blisters and pops. The success depends upon the length of time it is beaten.

4. **Baking Powder Biscuit.**—One quart of flour, 1 teaspoonful of salt and two teaspoonfuls of baking powder sifted together, 1 tablespoonful of lard, thoroughly rubbed into the flour. Mix as soft as can be handled, with sweet milk. Roll into sheets $\frac{3}{4}$ of an inch thick; cut with small biscuit cutter and bake in hot oven about 15 minutes.

SANDWICHES.

“Bad dinners go hand in hand with total depravity, while a properly fed man is already half saved.”

1. **Ham Sandwiches.**—Put 2 small pickles and 1 pound of cold boiled ham through a meat cutter; add a dash of pepper, a tablespoonful of mixed mustard and 2 tablespoonfuls of melted butter; mix thoroughly, spread on thin slices of buttered bread, lay over top slices and cut into squares or fancy shapes.

2. **Chicken Sandwiches.**—Take the meat of one well cooked and seasoned chicken and chop it very fine. Melt 2 tablespoonfuls of butter in a frying pan or skillet and when it begins to bubble add 2 tablespoonfuls of flour, stir and cook—not brown; then add 2 cups of sweet milk. After stirring until smooth and hot, add the chicken and $\frac{1}{2}$ tablespoonful of curry powder and 2 dashes of paprika (quantity depending on size of chicken). After all is well warmed, set aside to cool, then spread thick on a slice of buttered bread; over this sprinkle a teaspoonful of finely chopped nuts, then lay on top another slice of bread.

3. **Apple and Celery Sandwiches.**—Chop very fine $\frac{1}{2}$ dozen of the small inside stalks of celery and 2 large tart apples and sprinkle lightly with salt and then spread between thinly cut slices of buttered bread.

4. **Club Sandwiches.**—Cut three thin slices of bread and then toast and butter them; place a lettuce leaf on the lower slice, on top of this a piece of boneless cooked chicken, well seasoned; then another slice of buttered toast; on top of that another lettuce leaf, topped with thin slices of hot breakfast bacon, and on this the third slice of toast; on top of this last slice of bread lay strips of pickle cut lengthwise; the bread and bacon should both be hot.

5. **Nut Sandwiches.**—Take some chopped, roasted and salted peanuts; mix with mayonnaise, to spread easily; or, very finely chopped English walnuts may be used instead of the peanuts. Spread on buttered whole wheat bread.

6. **Sweet Sandwiches.**—Blanch and chop very fine 1 lb. of almonds and add 1 tablespoonful of orange flower water or rose water, the beaten white of an egg, 1 tablespoonful of sugar. Mix and spread on buttered bread.

7. **Salmon Sandwiches.**—Chop fine a bit of salmon and sliced cucumber pickle, pour a little melted butter over it, dust with paprika and salt and spread on buttered bread.

8. **Nut and Cheese Sandwich.**—Take equal parts of English walnuts (pounded to a meal) and grated cheese and moisten with thick cream. Season to taste and spread on bread.

9. **French Sandwiches.**—Mash 2 hard boiled eggs very fine to a paste;

add 1 Neufchatel cheese and mash together; then add a dash of cayenne pepper, a tablespoonful of onion juice and 3 Spanish peppers.

10. **Pimentos.**—Make the following mayonnaise dressing: 1 egg, well beaten; add sugar and salt to taste, a lump of butter, 1 tablespoonful of flour and some vinegar; boil until it thickens; then beat and when cold add a little sweet cream. Cut the pimentos in small bits, add mayonnaise and mix all together and spread on buttered bread. Cut in any form desired.

11. **Egg Sandwiches.**—Grate hard boiled eggs upon two slices of buttered bread, sprinkle with pepper and salt and put the two slices of bread together.

COOKIES.

Now good digestion wait on appetite, and health on both.—*Shakespeare.*

1. **Crisp Chocolate Cookies.**—Two cups of sugar, 1 cup of butter, 1 egg, 1 cup of sour cream, 1 teaspoonful of soda; mix with flour in soft dough; add either cocoa or chocolate, according to taste. Roll thin and bake in moderate oven.

2. **Fruit Cookies.**—Beat three eggs, light; add $1\frac{1}{2}$ cups of sugar, 1 cup of butter, 1 cup of molasses, 1 cup of sweet milk, 2 teaspoonfuls of soda, 1 teaspoonful each of ginger, cloves and cinnamon, 1 cup of seeded raisins and flour enough to make a stiff dough.

3. **Crumb Cakes.**—Take three-fourths pint of lard, a pinch of salt, 1 pint of sugar, a little cinnamon, 3 pints of cake crumbs, 1 pint of Orleans molasses, 1 pint of cold water, 1 teaspoonful of soda and enough flour to roll.

4. **Taylor Cakes.**—One cup of sugar, 1 cup of molasses, 1 cup of sour cream, 1 teaspoonful of soda, butter the size of an egg, 3 eggs, spices to taste, 4 cups of flour; drop on pan with spoon; sprinkle with sugar and bake.

5. **Ginger Drop Cakes.**—Take one cup each of molasses, sugar, shortening and sour milk; 3 eggs; 1 teaspoonful each of soda, ginger, cinnamon and cloves; flour enough to make a stiff batter. Bake in gem pans.

6. **Mother's Caraway Cookies.**—Two cups of sugar, 1 cup of butter, 4 tablespoonfuls of milk, 1 egg, 1 teaspoon very full of soda dissolved in 2 spoonfuls of milk. Add a handful of caraway seed. Knead hard as possible; roll thin and bake. Good without the caraway and will keep a month if the children will consent.

7. **Oatmeal Cookies.**—One cup of shortening, lard and butter; 2 eggs; $1\frac{1}{3}$ cups of sugar; 1 teaspoonful of soda dissolved in a little water, just enough to dissolve the soda; 1 teaspoonful of cinnamon; 6 tablespoonfuls of sweet milk; 1 cup of seeded raisins, chopped; 3 cups of oatmeal, or rolled oats; 1 cup of flour, or enough to make a soft dough.

8. **Scotch Cookies.**—Beat 1 cup of butter with 2 cups of sugar; add $\frac{1}{2}$ cup of milk in which has been dissolved 1 teaspoonful of soda; beat 2 eggs—whites and yolks—separately; mix 2 teaspoonfuls of cream of tartar with $\frac{1}{2}$ lb. of flour, 1 teaspoonful of powdered cinnamon; mix together, adding more flour from time to time; roll and bake quickly.

9. **Nut Cookies.**—Six tablespoonfuls of melted butter, 8 tablespoonfuls of sugar, 4 tablespoonfuls of milk, 2 eggs, 2 teaspoonfuls of baking powder, and flour to thicken. Stir the butter into the sugar; beat eggs light, and add them to butter and sugar; stir well; then add milk. Sift the powder with a

little of the flour and then add a good glass of nut meats; add enough flour to roll well.

10. **Hermits.**—Take one and one-half cups of brown sugar, 1 cup of butter, 1 cup of chopped raisins, 1 cup of chopped nuts, 1 teaspoonful of cinnamon and 1 teaspoonful of soda dissolved in $\frac{1}{2}$ cup of hot water. Then flour enough to mix like fruit cake. Drop in buttered pans and bake in moderate oven.

11. **Molasses Cookies.**—One cup of molasses, 1 teaspoonful of soda beaten in 2 cups of sugar, 1 cup of butter, $\frac{2}{3}$ cup of sour cream, 3 well beaten eggs, 1 teaspoonful of ginger, 1 teaspoonful of cinnamon, $\frac{1}{2}$ teaspoonful of salt, and flour to make soft dough; bake in a quick oven.

12. **Drop Ginger Cakes.**—Take one cup of sugar, 3 cups of flour, 1 cup of molasses, 1 cup of boiling water, $\frac{3}{4}$ cup of butter, 2 eggs, $1\frac{1}{2}$ teaspoonfuls of soda, 1 teaspoonful of ginger, $\frac{1}{2}$ teaspoonful of cinnamon, and a little grated nutmeg.

13. **Ginger Snaps.**—One cup each of sugar, molasses and butter, boiled together; when cool add 1 egg, 1 teaspoonful each of ginger, cinnamon and soda; flour to make a soft dough; roll very thin and bake in a quick oven.

14. **Ginger Cookies.**—(Without eggs or butter.) One-half pint of warm water, 1 pint of molasses, 1 cup of lard, 1 scant tablespoonful of soda, 1 tablespoonful of ginger, $\frac{1}{2}$ teaspoonful of baking powder, 1 cup of sugar; put one-half of the sugar in cookies and use rest to sprinkle on top before baking.

15. **Boston Cookies.**—Cream one cup of butter with $1\frac{1}{2}$ cups of sugar, add 3 eggs, dissolve 1 teaspoonful of soda in $1\frac{1}{2}$ tablespoonfuls of hot water and add to the mixture; then to $3\frac{1}{4}$ cups of flour add 1 teaspoonful of cinnamon, $\frac{1}{2}$ teaspoonful salt; add part of flour to mixture, then 1 cup of chopped walnuts, $\frac{1}{2}$ cup of raisins and $\frac{1}{2}$ cup of currants; then add rest of flour; drop from a spoon on greased pan and bake in a moderate oven.

16. **Lemon Drops.**—One cup granulated sugar, 2 ounces or 1 tablespoonful butter, $\frac{1}{2}$ cup sweet milk, 2 cups flour, 2 eggs, a pinch of salt; flavor with lemon and drop on buttered pan.

17. **Rocks.**—One cup of butter, 2 cups of brown sugar, 1 teaspoonful of baking soda, $\frac{1}{3}$ cup of hot water, 3 eggs beaten together, $1\frac{1}{2}$ cups of raisins or currants, $1\frac{1}{2}$ cups of English walnuts, 3 cups of flour, 1 teaspoonful of cinnamon; drop on pans and bake in quick oven.

18. **Peanut Cookies.**—One-half cup of lard, 2 cupfuls of brown sugar, 1 cup of milk, 2 eggs, 2 teaspoonfuls of baking powder, 1 cup of ground peanuts, flour enough to make a good cake batter; roll thin; cut into cookies; bake in quick oven.

19. **Cream Cookies.**—Two eggs, 1 cup sour cream, 1 cup butter, 2 cups sugar, 2 level teaspoonfuls soda.

20. **Lemon Cookies.**—Two and one-half cups sugar, 1 cup lard, 1 teaspoonful salt, 1 pint milk, 5 cents worth oil of lemon, 3 cents worth bakers' ammonia dissolved in the milk. Delicious.

21. **Cornstarch Cookies.**—Two teacups sugar, 1 teacup butter, 1 teacup sour cream, 1 teacup cornstarch, 2 eggs, 1 teaspoonful soda, flour sufficient to thicken; drop from spoon on greased tins and bake.

22. **Cookies.**—Two eggs, 1 cup sour cream, 1 cup butter, 2 cups sugar, 2 teaspoonfuls soda, and sufficient flour to roll out.

23. **Oatmeal Macaroons.**—Take $2\frac{1}{2}$ cups oatmeal, 1 cup brown sugar, 1 teaspoonful baking powder, 1 even teaspoonful butter, 1 teaspoonful vanilla,

2 eggs, beaten separately, putting in the well beaten whites last. Invert a heated granite baking pan and with a fork drop the mixture on the bottom about the size of a walnut and allow room to spread. Bake quickly in hot oven.

24. **Mince Crisp Cookies.**—One cup butter, 2 cups sugar, 3 well-beaten eggs, large spoonful of milk, 2 teaspoonfuls of baking powder, enough flour to make quite stiff dough; flavor with lemon or nutmeg. Brush tops with milk and sugar.

25. **Cookies (Mother B's).**—Two eggs, 2 cups granulated sugar, $\frac{3}{4}$ cup butter, pinch of salt; mix; 1 teaspoonful soda in $\frac{1}{2}$ cup sour milk; add flour to make a batter just thick enough to roll rather thin.

FRITTERS.

1. **Potato Fritters.**—One pint of boiled and mashed potato, $\frac{1}{2}$ cup of hot milk, 3 tablespoonfuls of butter, 3 spoonfuls of sugar, 2 eggs, 1 teaspoonful of salt, a little nutmeg. Add the milk, butter, sugar and seasoning to the mashed potato, and then add the eggs well beaten; stir until very smooth and light, spread about $\frac{1}{2}$ inch deep on a buttered dish and set away to cool; when cold, cut into squares, dip in beaten egg, and then in bread crumbs, and fry brown in boiling fat; serve immediately.

2. **Corn Fritters.**—One pint of cooked sweet corn, cut from cob, or canned corn may be used, $\frac{1}{2}$ cup sweet milk, 1 well beaten egg, 1 teaspoonful of salt, 1 teaspoonful of sugar, 1 small cup of flour, 1 teaspoonful of baking powder. Drop in hot lard or butter, and fry a nice brown.

3. **Fried Cream Fritters.**—One-half cup sugar, 1 quart sweet milk, 1 cup flour; take $1\frac{1}{2}$ pints of milk and put on stove with sugar; wet the flour with the remainder of milk, and cook until quite thick. Pour into jelly pans that have been dipped in cold water, let stand until cold, then cut in 2-inch squares, dip in egg, then in cracker crumbs, and fry in hot lard as for doughnuts, a light brown. Serve hot with maple syrup.

4. **Oyster Fritters.**—Take as many oysters as you want fritters, and wipe them dry. Make a batter as follows: one egg, well beaten; add to it one cup of milk, $\frac{1}{2}$ teaspoonful of salt, 1 pint of flour, and 1 heaping teaspoonful of baking powder. Dip oysters one by one in the batter and when the fat is smoking hot, drop them in and fry brown. Serve hot.

5. **Rice Cakes.**—One large cup of boiling rice, 3 eggs beaten separately, 1 level tablespoonful sugar, a little salt; beat thoroughly, and drop from a spoon into a well buttered hot skillet.

6. **Corn Fritters or Mock Oysters.**—Grate the corn from $\frac{1}{2}$ dozen ears of sweet corn or cut it from the cobs and run through a vegetable chopper; add 3 tablespoonfuls of sweet milk or cream, 1 teaspoonful salt, 1 egg, 1 teacup flour. Drop in hot lard and brown both sides. Make the size of an oyster. Make a plenty for they will all be eaten.

DOUGHNUTS.

"The true essentials of a feast are only fun and feed."—*O. W. Holmes.*

1. Doughnuts.—

"One cup of sugar, one cup of milk,
Two eggs beaten fine as silk,
Salt and nutmeg (lemon will do),
Of baking powder teaspoons two,

Lightly stir the flour in,
 Roll on pie board not too thin;
 Cut in diamonds, twist or rings,
 Drop with care the doughy things
 Into fat that briskly swells
 Evenly the spongy cells;
 Watch with care the time for turning,
 Fry them brown just short of burning;
 Roll in sugar, serve when cool.
 Price a quarter for this rule."

—Hazel A. Marquis.

2. **Improved Fat for Frying Doughnuts, Croquettes, Etc.**—Fry out carefully $2\frac{1}{2}$ lbs. of beef suet, add 1 lb. of fresh lard. After using, strain and put in small bucket and cover; may be used a number of times.

3. **Raised Doughnuts.**—Scald 1 pint of milk and pour over $\frac{1}{2}$ cup of lard and 1 cup of sugar. Add 1 cup of yeast and flour to make a stiff batter and let rise over night. In the morning add 1 egg and work in flour the same as mixing bread. Let the dough rise, cut out doughnuts, rise again and fry.

4. **Snow Balls.**—Two eggs, 1 cup sugar, 4 tablespoonfuls milk, 1 teaspoonful cream of tartar, $\frac{1}{2}$ teaspoonful soda, flour enough to roll into balls; fry in hot lard, dip in white of egg, and roll in fine white sugar.

5. **Fried Cakes.**—One egg, 1 cup sugar, 2 cups sour milk, $1\frac{1}{2}$ teaspoonfuls lard, 2 teaspoonfuls soda.

6. **Doughnuts (Fine).**—Two eggs, 1 cup sugar, 1 cup sour milk, good pinch of nutmeg, level teaspoonful soda in milk, butter almost as large as walnut, pinch of salt, flour to roll $\frac{1}{2}$ inch thick.

GEMS.

1. **Graham Gems.**—One cup of sweet milk, 2 tablespoonfuls of melted butter, 1 egg, 3 teaspoonfuls baking powder, a little salt and $2\frac{1}{2}$ cups of graham flour. Bake slowly in gem pans.

2. **Corn Gems.**—One cup of corn meal, 2 cups of flour, 1 cup of sweet milk, $\frac{1}{2}$ cup of sugar, $\frac{2}{3}$ cup of butter, 2 eggs, 4 teaspoonfuls baking powder, a pinch of salt. Bake in a quick oven.

3. **Wheat Gems.**—Three cups flour, 3 tablespoonfuls sugar, 3 teaspoonfuls baking powder; stir well; add 1 well-beaten egg, 4 tablespoonfuls melted lard, $1\frac{1}{2}$ cups of sweet milk or water.

MUFFINS.

1. **Muffins.**—Two eggs, a pinch of salt, 2 tablespoonfuls melted butter, 2 teaspoonfuls baking powder, 1 cup milk, enough flour to make a stiff dough; drop in muffin tins; bake in quick oven.

2. **Corn Muffins.**—One-half cup of butter or lard, 2 eggs, $\frac{3}{4}$ cup of sugar, 1 cup of sweet milk, 2 cups of sifted flour, 1 cup of corn meal, 4 teaspoonfuls of baking powder, $\frac{1}{2}$ teaspoonful of salt; beat thoroughly and bake quickly.

WAFFLES.

1. **Waffles.**—Three eggs beaten separately, 1 quart of buttermilk, piece of butter the size of a walnut, pinch of salt, 1 teaspoonful of baking soda, flour to thicken. Mix buttermilk, salt, melted butter and yolks; then add

soda which has been moistened with a little of the buttermilk; then add flour, and lastly the beaten whites. Bake in waffle irons.

CORN DODGERS—CORN PONE—CORN CAKE.

1. **Corn Dodgers.**—Place 2 cups of corn meal in a bowl and pour over it enough boiling water to scald and moisten it. Stir it while pouring the water on; while hot add 1 tablespoonful of shortening; when cold add 1 beaten egg, 2 tablespoonfuls of milk and 1 teaspoonful of salt. Bake in gem pans or on the griddle.

2. **Corn Cake.**—Two eggs beaten light; add 1 cup sugar, $\frac{1}{4}$ cup butter; beat light; add 1 cup milk; sift together 2 cups cornmeal, 1 cup flour, 3 teaspoonfuls of baking powder and a small teaspoonful of salt; add to mixture and bake in a moderate oven.

3. **Corn Pone.**—Two eggs, $\frac{1}{2}$ cup of shortening, $1\frac{1}{4}$ cups of sugar, 1 cup of corn meal, 2 teaspoonfuls baking powder and milk to make light cake batter. Bake in slow oven.

BUNS.

1. **Currant Buns.**—Beat 1 egg into a cup and fill with sweet milk; mix with it $\frac{1}{2}$ cup of yeast, 1 cup of sugar, $\frac{1}{2}$ cup of butter, enough flour to make a soft dough. Let rise until very light; then mold currants into buns; let rise a second time in pan; before baking glaze with a little molasses or sugar and milk.

2. **Buns That Boys Like.**—To about as much light bread dough as for a loaf of bread, at the stage that it is light and ready for the pans, add $\frac{1}{2}$ cup of lard or butter, $\frac{1}{2}$ cup of sugar, 1 egg, $\frac{3}{4}$ pint of warm water. Mix all to a smooth paste; thicken with flour; let rise; form into small biscuits; let rise and bake. This brings them just right for the evening meal; if wanted for midday dinner, use 1 quart of sponge in place of the dough.

DUMPLINGS.

1. **Drop Dumplings.**—One small cup of sweet milk or water, 1 egg, 1 teaspoonful of baking powder, flour enough to make drop batter. Very good for meat stews of any kind.

2. **Always Light Dumplings.**—To each cup of sifted flour, sift in 1 heaping teaspoonful of baking powder; salt to taste; wet with cold water and drop onto meat and bones; cover the kettle and cook 20 minutes.

3. **Chicken Dumplings.**—One cup sweet milk, 1 egg well beaten, 1 pint sifted flour, $\frac{1}{2}$ teaspoonful of salt, 1 tablespoonful of baking powder; stir all well together and drop the batter, a spoonful at a time, into chicken or beef broth just checked from boiling. Let boil 15 minutes. These dumplings are very nice.

CRULLERS.

1. **Crullers.**—Dissolve 1 teaspoonful of soda in 4 tablespoonfuls of milk, or leave out one of milk and substitute 1 of wine. Strain it into $\frac{1}{2}$ pint of flour and 4 tablespoonfuls of melted butter or lard. Beat 4 eggs with 6 heaping tablespoonfuls of sugar; work them into the rest of the ingredients; add flour to make stiff enough to roll out, then cut and fry in hot lard; flavor with grated nutmeg.

JUMBLES.

1. **Jumbles.**—One cup of butter, 2 cups of sugar, $\frac{2}{3}$ cup of sour cream, 3 eggs, 1 teaspoonful of salt and a little nutmeg; flour to make soft dough. Bake quickly.

2. **Favorite Jumbles.**—One cup of butter, 2 cups of sugar, 1 cup of sweet milk, 4 cups of flour, 3 eggs and 3 teaspoonfuls of baking powder. Mix thoroughly and drop on buttered tins with a large spoon; sprinkle with sugar before baking.

TOASTS.

1. **American Toast.**—To 1 egg thoroughly beaten, add a little salt and 1 cup of sweet milk. Slice light bread and dip into the mixture, allowing each slice to absorb some of the milk; then brown on a hot buttered griddle. Serve very hot.

2. **Good Toast.**—Spread thin slices of light bread with butter, then cover with sugar; grate a little nutmeg and put a tablespoonful of cream on each slice; brown in the oven; serve hot.

3. **Dry Beef Toast.**—One-half cup chopped beef picked in fragments and 1 heaping tablespoonful butter; put in saucepan and when hot add 2 cups sweet milk; let it boil, then put in 3 well beaten eggs and pepper to taste. Toast thin slices of bread, dip them in hot salted water, arrange on a platter and pour over them the beef gravy. Horseradish may be served with this, or apple jelly, or currant jam.

CRACKERS.

1. **Graham Crackers.**—Two teaspoonfuls of baking powder, $\frac{3}{4}$ cup brown sugar, $\frac{1}{2}$ cup of shortening, 1 quart of graham flour, salt to taste. Wet with milk; roll into thin cakes, using white flour for rolling out.

RUSKS.

1. **Children's Rusks.**—Make soft sponge of 1 pint of milk, $\frac{1}{2}$ cake of compressed yeast dissolved in lukewarm water, and sifted flour. Let rise over night. In the morning add $\frac{1}{2}$ cup of melted butter, 1 teaspoonful of soda, 1 egg and a little salt. Flavor with cinnamon. Sift in flour enough to make a firm dough. Mold into rolls, place in pans, let rise again and bake in a quick oven. When done, dampen the tips slightly and sift on some powdered sugar.

SCOTCH SCONES AND APPLE KOKER.

1. **Scotch Scones.**—Sift together 1 quart of flour, $\frac{1}{2}$ teaspoonful of salt, 1 teaspoonful of sugar and 2 heaping teaspoonfuls of baking powder; rub in 1 large tablespoonful of butter, cold; add 2 beaten eggs and nearly $\frac{1}{2}$ pint of sweet milk; mix into smooth dough; knead quickly and roll out to $\frac{1}{3}$ of an inch in thickness; cut out with knife into squares about the size of soda crackers; fold each cornerwise, to form triangles; place in pan and brush over with egg and milk; bake 10 minutes in hot oven.

2. **Apple Koker.**—To 1 beaten egg add 1 cup of sweet milk and one tablespoonful melted butter; thicken with 2 heaping cups flour with 2 teaspoonfuls baking powder; spread on pans; put quartered apples thick over the top and sprinkle with sugar, cinnamon or nutmeg. Put on a few small bits of butter and bake. Serve warm with cream.

GRIDDLE CAKES.

1. **Griddle Cakes.**—One quart of sour milk, a pinch of salt, 1 egg, 1 teaspoonful soda and flour to make of right thickness.

2. **Corn Meal Griddle Cakes.**—Take one pint of either sour milk or buttermilk, one pint of corn meal, one egg, one teaspoonful salt, one teaspoonful soda. Bake on a griddle.

3. **Graham Griddle Cakes.**—Half a pint of corn meal, half a pint of flour, one pint of Graham flour, one heaping teaspoonful sugar, half a teaspoonful salt, one egg, one pint buttermilk, one teaspoonful soda.

4. **Buckwheat Cakes.**—One quart of lukewarm water, 3 tablespoonfuls of flour, 3 tablespoonfuls of corn meal, 1 heaping teaspoonful of salt, $\frac{1}{2}$ cake of yeast or $\frac{1}{2}$ cup of liquid yeast, and buckwheat to make a batter thin enough to pour. Let rise over night; in the morning stir well and add 2 tablespoonfuls of molasses and $\frac{1}{2}$ teaspoonful of soda dissolved in hot water; bake on hot griddle. Save enough batter to raise another mixing instead of using new batter.

5. **Egg Pancakes.**—Two cups of flour, 1 teaspoonful of sugar, $\frac{1}{2}$ teaspoonful of baking powder, 2 eggs well beaten, enough milk to make a thin batter. Bake on a hot griddle.

6. **Potato Cakes.**—Two cups of cold mashed potatoes, $\frac{1}{2}$ cup of flour, $\frac{2}{3}$ cup of milk, 3 eggs, 2 teaspoonfuls of baking powder, salt and pepper to taste; stir the beaten yolks and milk into the potato, then the flour and baking powder sifted together; beat thoroughly, and lastly fold in the well beaten whites; bake on a well buttered griddle.

CAKE MAKING.

(Including Recipes and Directions for Making All Kinds of Cakes, Frostings, Icings and Fillings.)

Aye, to the leavening, but here's yet in the word hereafter the kneading, the making of the cake, the heating of the oven, and the baking. Nay, you must stay the cooling, too, or you may chance to burn your mouth.—*Shakespeare.*

GENERAL DIRECTIONS.

Only the best of materials should be used for cake. The pans for baking should be perfectly clean and free from odor and should not be used for any other purpose.

The butter should not be oily but just soft enough to cream well with sugar. In making white cake do not use colored butter for the coloring matter will not disappear like the natural color does. If there is too much salt in the butter it should be freshened by working it in cool water. Use only the very best.

The sugar should generally be either powdered sugar or "coffee A." If granulated sugar is used it should be very fine. Use pulverized sugar for delicate cakes; coffee-crushed, powdered and sifted for rich cakes; the best brown sugars for dark cakes; granulated and "coffee A" for fruit cakes and jelly cakes.

The eggs should be fresh and cold to beat well. In summer cool them on ice or in cold water. Many of our best cooks think they get better results by whipping with a fork or wire spoon than with a beater. Always beat the eggs in an earthen vessel and never in tin; a pinch of salt added makes them come to a froth quicker. The whites and yolks should be beaten separately.

Most cooks grease the cake pans with fresh lard. If butter is used it should not be too salty or the cake will stick. Cover the bottoms of the pans with white or manilla paper. As soon as taken from the oven set the pan upon a cloth wrung out of water for two or three minutes and the cake will not stick when being taken from the pan.

Always cream the butter and sugar first, then add the yolks of eggs, milk, and lastly the flour and whites of eggs.

In mixing cake, do not **stir**, but **beat** it thoroughly, unless otherwise directed, bringing the batter up from the bottom of the dish with every stroke. Use a long handled wooden spoon. An iron spoon turns the mixture black. Never beat a cake in tin but use earthen or stone ware.

Remember that sour milk and soda go together; and sweet milk and baking powder go together; and that baking powder combines the properties of soda and cream of tartar and is always used alone.

To one quart of flour use $2\frac{1}{2}$ teaspoonfuls of baking powder.

To one quart of flour use 1 teaspoonful of soda and 2 teaspoonfuls of cream of tartar.

When molasses is used the cake should always be baked in a moderate oven for the molasses makes it burn easily.

In cake making do not try to economize too much in materials as a cake is often spoiled by some petty economy.

It is a bad thing to disturb a cake or even open the oven door for the first ten minutes while baking or until the cake is "set," but if it is baking unevenly it should be turned very gently, keeping the oven door open as short a time as possible. Outside air affects the baking and will make the cake fall.

Test with a broom splint or knitting needle. When the cake is done none of the mixture will adhere.

If the oven bakes too fast on the bottom, place the grate under the cake; if too hot on the top, set a pie pan of water on the top grate.

For baking sponge or pound cake, the oven should be hot enough to turn a piece of white paper a rich yellow in 5 minutes. For cookies, layer cakes or cup cakes, the paper should turn a dark brown in 5 minutes. For baking bread, throw a little flour on the bottom of the oven and if it browns quickly without taking fire the heat is sufficient. For baking puff paste, the heat should be greatest first and decrease later. This is to keep the paste in shape. When the oven is too hot the temperature may be reduced by placing a pan of cold water in it. After a cake is in, should the oven be found too hot so that the cake browns almost immediately, lift a lid off the stove and cover the cake with a buttered paper. The cake will not be as nice as if it were not browned so quickly but this is all you can do.

Sprinkle a little flour over the top of a cake to prevent the icing from running off. Pour on a small quantity of icing, spread it over the cake with a broad knife, which dip frequently in hot water to keep it from sticking. Never try to ice a cake while hot, and let layer cakes get nearly cold before putting together.

Gingerbread should be baked with a moderate fire as it is easily burned.

Put only a little of the dough on the board at once in making cookies. It is more easily managed in this way. Cookies must be gotten into the pans as soft as possible.

The fire should be fixed, the pans greased and everything in readiness before the cake is mixed if baking powder is used for it effervesces but once and there should be no delay in baking. The cake should rise in the oven and not the mixing bowl.

Bread and cake pans made of sheet iron are better than those made of tin.

CAKE RECIPES.

1. **Buttermilk Cake.**—One-half cup of butter; 2 cups of brown sugar; 2 cups of buttermilk; 1 lb. of currants; 1 lb. of raisins; 1 lb. of citron. Use one cup of flour in which to dredge the raisins; two level teaspoonfuls of soda dissolved in milk; cloves, nutmeg and cinnamon to taste and flour to stiffen. Bake two hours.

2. **Delicate Cake.**—Two cups of sugar; whites of 4 eggs; $\frac{1}{2}$ cup butter; $\frac{1}{2}$ cup sweet milk; 3 cups flour; 1 teaspoonful either soda or baking powder; 2 teaspoonfuls of cream of tartar. Flavor with lemon.

3. **Grandma's Cake.**—Two cups of medium brown sugar, $\frac{1}{2}$ cup melted butter beaten well with 2 eggs. When thoroughly beaten add a small cup of sour milk, 1 teaspoonful of baking soda, 3 cups of sifted flour and 1 teaspoonful of baking powder; 1 teaspoonful of vanilla; bake well in moderate oven either in loaf or layers. If in layers use any filling desired.

4. **Economical Cake.**—One cup of sugar, 1 egg, $\frac{2}{3}$ cup of milk, 2 tablespoonfuls of butter, 1 tablespoonful of baking powder, 2 cups of flour.

5. **Caramel Cake.**—Two eggs, 2 cups of brown sugar, $\frac{1}{2}$ cup butter, $\frac{1}{2}$ cup of sour cream, 1 cup grated chocolate, $\frac{1}{2}$ cup hot water, $\frac{3}{4}$ teaspoonful of soda, 2 teaspoonfuls baking powder; mix chocolate and hot water together, then add soda and also $2\frac{1}{2}$ cups of flour.

6. **Wedding Cake.**—Five pounds sugar, 50 eggs, 5 lbs. flour, 5 lbs. butter, 15 lbs. raisins, 10 lbs. currants, 3 lbs. citron, 1 pint brandy, 4 ounces nutmeg, 4 ounces mace, 1 ounce cinnamon, $\frac{1}{4}$ ounce cloves; this will make 43 or 44 pounds, is unequalled and will keep 20 years.

7. **Sultana Cake.**—One pound flour, $\frac{3}{4}$ lb. butter, $\frac{3}{4}$ lb. sugar, 8 large eggs, 1 lb. Sultana raisins, juice and grated rind of a lemon, $\frac{1}{2}$ grated nutmeg. Beat butter and sugar to a cream, add flour, then yolks of eggs well beaten, next flavoring, then raisins dredged with flour, lastly the whites of eggs beaten very stiff. Bake one hour and a half in a slow oven.

8. **Taylor Cake**—(A Fine Fruit Cake).—Seven eggs, $1\frac{1}{4}$ lbs. butter, 1 pint boiled cider, $7\frac{1}{2}$ cups flour, 1 lb. currants, 2 lbs. raisins, $\frac{1}{4}$ lb. citron, $\frac{1}{4}$ lb. orange peel, 1 teaspoonful soda, 1 teaspoonful cream of tartar, 1 teaspoonful cloves, 3 nutmegs.

9. **Fruit Cake.**—One cup molasses, 2 cups brown sugar, 1 cup butter, $\frac{1}{2}$ cup milk, 4 eggs, 4 cups flour, 3 cups stoned raisins, 3 cups currants, 1 cup chopped citron, 1 teaspoonful nutmeg, 1 teaspoonful ground cinnamon, $\frac{1}{2}$ teaspoonful cloves, 1 teaspoonful of soda and 2 of cream of tartar or 3 of baking powder.

10. **Marble Cake.**—White Part.—One cup of white sugar, whites of 4 eggs, $\frac{1}{2}$ cup of butter, $\frac{1}{2}$ cup of sweet milk, 2 teaspoonfuls of baking powder, 1 teaspoonful of lemon or vanilla and $2\frac{1}{2}$ cups of sifted flour. Dark Part.—One cup of brown sugar, yolks of 4 eggs, $\frac{1}{2}$ cup of molasses, $\frac{1}{2}$ cup of

butter, $\frac{1}{2}$ cup of sour milk, 1 teaspoonful of ground cloves, 1 teaspoonful of mace, 1 teaspoonful of cinnamon, 1 grated nutmeg, 1 teaspoonful of soda dissolved in a little milk and added after part of the flour is stirred in; $1\frac{1}{2}$ cups of sifted flour. Drop a spoonful of the light then the dark, alternately, into a well buttered cake pan.

11. **Myrna Marble Cake.**—White Part.—One cup of white sugar, whites of 4 eggs, $\frac{1}{2}$ cup of butter, $\frac{1}{2}$ cup of sweet milk, 2 teaspoonfuls of baking powder, 1 teaspoonful of lemon or vanilla, $2\frac{1}{2}$ cups of sifted flour. Dark Part.—One cup of brown sugar, yolks of 4 eggs, $\frac{1}{2}$ cup of molasses, $\frac{1}{2}$ cup of butter, $\frac{1}{2}$ cup of sour milk, add cloves, cinnamon or strawberry. One teaspoonful of soda and $1\frac{1}{2}$ cups of flour.

12. **Sponge Cake.**—Three eggs beaten for 5 minutes, 1 cup of sugar, $\frac{1}{2}$ cup sweet milk, 1 teaspoonful of lemon, 2 cups flour, 2 teaspoonfuls of baking powder; bake slowly.

13. **Angel Food.**—One large tumbler of granulated sugar, $\frac{1}{2}$ tumbler of powdered sugar, 1 tumbler of sifted flour, whites of 11 eggs, 1 teaspoonful of cream of tartar. Beat the eggs to a stiff froth; sift the sugar 4 times; sift the cream of tartar through the flour 4 times; add the sugar to the eggs slowly, as for frosting; add flour, stirring lightly and as little as possible; flavor with almond or vanilla. Bake in a deep unbuttered pan for $\frac{3}{4}$ of an hour. When done remove from oven and turn upside down, allowing the edges of the pan to rest on some supports. When entirely cold remove carefully from the pan. Much of your success depends upon the baking and handling.

14. **Ice Cream Cake.**—One-half cup of butter, $1\frac{1}{2}$ cups of powdered sugar, $\frac{1}{2}$ cup of milk, $\frac{1}{2}$ cup of cornstarch, $1\frac{1}{2}$ cups of flour, 2 level teaspoonfuls of baking powder, $\frac{1}{2}$ teaspoonful vanilla, whites of 6 eggs; beat the butter to a cream, add gradually the sugar, then the milk alternately with the flour to keep it from curdling. Stir in lightly the beaten whites of the eggs the last thing before putting into the pans. Bake in moderate oven for 20 minutes. This makes 2 layers.

15. **Devil's Food.**—Two cups of brown sugar, 2 eggs, $\frac{1}{2}$ cup sweet milk, $\frac{1}{2}$ cup butter, 2 cups sifted flour, 1 teaspoonful of baking powder, 1 teaspoonful of soda, 1 cup grated chocolate, $\frac{3}{4}$ cup brown sugar, $\frac{1}{2}$ cup sweet milk. Cook to thick cream, add 1 teaspoonful of vanilla and stir into the batter hot. Bake in 2 layers in a moderate oven.

16. **Devil Cake.**—One small cake Baker's chocolate, 2 cups granulated sugar, 1 cup butter, 1 cup buttermilk or sour milk, 3 cups sifted flour, 1 level teaspoonful soda dissolved in hot water, 6 eggs beaten separately. Put chocolate in bowl, set in boiling water and dissolve, add sugar and butter and beat light; add yolks of eggs, then milk and soda; add flour and beaten whites of eggs at once and beat till well mixed. Bake in layers and ice.

17. **Jelly Roll.**—One cup sugar, 4 eggs, 1 cup flour, 1 teaspoonful baking powder; beat well together. Bake in large shallow pan, spread with jelly and roll while warm.

18. **Quick Cake.**—Three eggs, $2\frac{1}{2}$ cups of flour, $\frac{1}{2}$ cup butter, $\frac{1}{2}$ cup lard, 1 cup of milk, 1 cup of sugar, 4 teaspoonfuls of baking powder, 2 teaspoonfuls of vanilla.

19. **One Egg Cake.**—One tablespoonful of butter, one cup of sugar, 1 egg beaten, $\frac{3}{4}$ cup milk, $1\frac{1}{2}$ cup flour, 2 teaspoonfuls of baking powder.

20. **Nut Cake.**—One cup butter, 2 cups sugar, 4 eggs, 1 cup milk, 3 cups flour, 2 teaspoonfuls baking powder, 1 cup nut kernels.

21. **Plain Walnut Cake.**—Two cups of flour, 1 teaspoonful of baking powder, $\frac{1}{2}$ cup butter, 1 cup sugar, 2 eggs, 1 cup milk; beat all together and add 1 cup chopped walnuts and 1 teaspoonful of vanilla.

22. **Lemon Cake.**—Two cups sugar, 1 cup butter, 7 eggs, $1\frac{1}{2}$ pints of flour, 1 teaspoonful baking powder, 1 teaspoonful lemon extract. Rub the butter and sugar to a light cream; add the eggs two at a time, beating 5 minutes. After each addition add the flour sifted with the powder and the extract mixed into a medium batter. Bake 40 minutes in paper lined tin in moderate oven.

23. **Ribbon Cake.**—Two cups sugar, $\frac{1}{2}$ cup butter, 4 eggs, 1 cup milk, $3\frac{1}{2}$ cups flour, spices, 3 level teaspoonfuls baking powder, $\frac{1}{2}$ lb. finely chopped figs, $\frac{1}{2}$ cup raisins stoned and cut into pieces, 1 tablespoonful of molasses. Cream the butter, add gradually the sugar and well beaten egg yolks, then the milk. Sift the baking powder and flour together thoroughly, then add the egg whites beaten to a stiff froth. Bake one-half of the mixture in a layer cake pan. To the remainder add the fruit, molasses and spices to taste. Bake and put the layers together with icing.

24. **Gold and Silver Cake.**—One cup of white sugar, yolks of 4 eggs well beaten, $\frac{1}{2}$ cup of butter, $\frac{1}{2}$ cup of milk, 2 cups of flour, 1 tablespoonful of baking powder. Same for the silver, except use the whites of eggs.

25. **White Mountain Cake.**—Three-fourths cup of butter, 2 cups sugar, whites of 7 eggs, 1 cup cornstarch, 2 teaspoonfuls baking powder, 2 cups flour.

Filling.—One-half cup cold water, 2 cups sugar; boil until it threads, then beat into the whites of two eggs; flavor with vanilla.

26. **Hickory Nut Cake.**—One cup of chopped nuts, $\frac{1}{2}$ cup butter, 3 eggs, $1\frac{1}{2}$ cups sugar, 1 cup milk, 3 cups flour; cream the sugar and butter and then add milk, then yolks of eggs, well beaten, then flour well sifted with heaping teaspoonful of baking powder, then nuts and whites of eggs well beaten.

27. **Lemon Jelly Cake.**—Four tablespoonfuls of butter, 2 cups of coffee sugar, 4 eggs, leaving white of one for frosting; beat whites of the eggs separately; mix yolks with butter and sugar; add whites last after flour is added; 1 cup of milk, $3\frac{3}{4}$ cups of flour, 2 teaspoonfuls of baking powder mixed with flour, 1 teaspoonful of lemon extract.

Filling.—One egg, 1 cup of sugar, juice and grated rind of one lemon, 1 tablespoonful of water, 1 teaspoonful of flour. Boil till it thickens; when cool, spread between layers.

28. **Prince of Wales Cake.**—White Part.—One-half cup sugar, $\frac{1}{2}$ cup butter, $\frac{1}{2}$ cup sweet milk, 2 cups flour, 1 teaspoonful vanilla, 2 teaspoonfuls baking powder, whites of 3 eggs. Dark Part.—One-half cup butter, 1 cup brown sugar, yolks of 3 eggs, $\frac{1}{2}$ cup sour milk, 2 cups flour, 1 tablespoonful molasses, $\frac{1}{2}$ teaspoonful cloves, 1 teaspoonful cinnamon, 1 teaspoonful nutmeg, 1 teaspoonful soda dissolved in warm water, 1 cup raisins; bake each portion in two layers and use white boiled icing.

Icing.—One-half cup water, $1\frac{1}{2}$ cups sugar; cook until it threads, then stir until it is smooth.

29. **Angel Cake.**—One and a half tumblers of pulverized sugar, whites of 11 eggs, 1 tumbler of flour, 1 teaspoonful cream of tartar, 1 teaspoonful vanilla; sift flour and cream of tartar three times; sift sugar once; then sift

flour and sugar together three times. Beat the eggs to a stiff froth, then very lightly add sugar and flour. Bake at once in a slow oven, 40 minutes. Turn the pan upside down to cool. Do not grease the tin.

30. **Anna's Cup Cake.**—One-half cup of sweet milk, $\frac{1}{2}$ cup of butter, 2 eggs, 1 cup of sugar, 2 cups of flour, 2 teaspoonfuls of baking powder. Can use this for many kinds of cake, with or without fruit, with different kinds of flavoring and different kinds of filling; bake in loaf or layer, or in patty pans.

31. **Chocolate Cake.**—One cup of sour milk, 1 cup of molasses, $\frac{1}{2}$ cup of butter or lard, yolks of two eggs, 3 cups of flour.

Frosting.—One square of chocolate, 1 cup of sugar, white of one egg, 1 teaspoonful of vanilla.

32. **Cornstarch Loaf Cake.**—Three-fourths cup of butter, $1\frac{1}{4}$ cups of sugar, 1 cup of sweet milk, 3 eggs, or whites of four, 3 teaspoonfuls baking powder, $\frac{3}{4}$ cup of cornstarch, enough flour to make a moderately stiff batter; flavor to suit taste.

33. **Centennial Cake.**—One cup of butter, 2 cups of sugar, 1 cup sweet milk, 4 cups flour, 3 heaping teaspoonfuls baking powder, 5 eggs; beat the whites separately and add the last thing before baking; flavor to suit.

34. **Cocoa Cakes.**—Cream $\frac{1}{2}$ cup of butter; add $\frac{1}{4}$ cup of cocoa, the beaten yolks of three eggs, 1 cup sugar, 1 teaspoonful cinnamon, $\frac{1}{2}$ cup of water, then the beaten whites of 3 eggs, $1\frac{1}{4}$ cups of flour, and 3 teaspoonfuls of baking powder. Bake in gem pans.

35. **Delicate Cocoanut Cake.**—One-half cup of butter, one cup of sugar, whites of 3 eggs, $\frac{1}{2}$ cup of sweet milk, 2 cups of flour, 2 teaspoonfuls of baking powder; bake in a long pan; make boiled icing and stir in one large cup of cocoanut; spread thickly on top of cake, sprinkling fresh grated cocoanut on top.

36. **Crumb Cake.**—Three cups of flour, $1\frac{1}{2}$ cups of sugar, $\frac{3}{4}$ cup of butter or lard; mix sugar, flour and butter together and take out $\frac{1}{2}$ cup for crumbs; into the balance put 2 teaspoonfuls of baking powder, $\frac{3}{4}$ cup of milk and 1 egg; flavor with nutmeg; make out in two loaves and sprinkle crumbs over the top and bake. Better when eaten warm.

37. **Cheap Cake.**—One-half cup of butter, 1 cup of sugar, $\frac{1}{2}$ cup of sweet milk, 3 eggs, saving out the white of one for icing; 2 teaspoonfuls of baking powder, and flour enough to make thick but not stiff. This can be baked in a square loaf and cut in squares.

38. **Coffee Cake.**—One cup of melted butter, 2 cups of brown sugar, 1 cup of strong coffee, 4 cups of flour, 2 eggs, 1 teaspoonful of cloves, cinnamon and nutmeg; 1 cup of raisins, boiled and seeded; 2 heaping teaspoonfuls of baking powder.

39. **Clara Follett's Cake.**—Cream half a cup of butter; add $\frac{1}{4}$ cup of cocoa, the beaten yolks of 3 eggs, 1 teaspoonful of cinnamon, 1 cup of sugar, and $\frac{1}{2}$ cup of water, then the beaten whites of eggs and $1\frac{1}{4}$ cups of flour, with 3 heaping teaspoonfuls of baking powder.

40. **French Cake.**—One cup of milk, $1\frac{1}{2}$ cups of sugar, 3 cups of flour, 4 tablespoonfuls of butter, 2 eggs, $\frac{3}{4}$ teaspoonful of soda, $1\frac{1}{2}$ teaspoonfuls of cream of tartar; flavor according to taste. Put the soda in the milk, and the cream of tartar in the flour.

41. **Feather Cake.**—Cream 1 tablespoonful of butter; add 1 cup of sugar,

then 1 egg well beaten, $1\frac{1}{2}$ cups of flour, $\frac{1}{2}$ cup of sweet milk; beat well; add 2 level teaspoonfuls of baking powder. Bake 20 minutes.

42. **Gospel Cake.**—Three and one-half cups of flour, (1st Kings 4-22); 1 cup of butter (Judges 5-25); 3 cups of sugar (Jeremiah 6-20); 2 cups of raisins (1st Sam. 30-12); 1 cup of water (Genesis 24-17); 1 cup of almonds (Genesis 43-11); 6 eggs (Isaiah 10-14); 1 tablespoonful of honey (Exodus 15-21); a pinch of salt (Leviticus 2-13); 3 eggs (yolks); 1 pint of milk; spices, 2 tablespoonfuls. Follow Solomon's advice for making good boys and you will have a good cake. (Prov. 12-14.)

43. **Silver Cake.**—One cup of milk, whites of 6 eggs, 2 cups of sugar, $\frac{2}{3}$ cup of butter, 4 cups of flour, $\frac{1}{4}$ teaspoonful salt, 2 teaspoonfuls baking powder, 1 teaspoonful almond extract; cream the sugar and butter; then add alternately the milk and flour, having sifted the flour, baking powder and salt well together; then add extract and the well beaten whites of eggs; beat well and bake in loaf pan in moderate oven.

44. **Lady Cake.**—One-half cup of butter, $1\frac{1}{2}$ cups of sugar, $\frac{3}{4}$ cup of sweet milk, 2 cups of flour, 2 teaspoonfuls of baking powder, whites of four eggs whipped to a stiff froth. Flavor with almond, peach or rose water.

45. **A Cheap Fruit Cake.**—One cup of sour milk, 1 cup of sugar, $2\frac{1}{2}$ cups of flour, 1 cup of raisins, 1 teaspoonful of cinnamon, allspice or cloves, 1 egg, butter the size of an egg; good.

46. **Black Fruit Cake.**—One pound of brown sugar, 1 pound of butter, 10 eggs, 2 pounds of raisins, 3 pounds of currants, 2 tablespoonfuls of cinnamon, 1 tablespoonful of ginger, 1 teaspoonful of cloves, 1 nutmeg, 3 teaspoonfuls of baking powder, $\frac{1}{2}$ cup of cold water, $\frac{1}{2}$ teacup of molasses, $\frac{1}{2}$ pound of citron, flour enough to make it the consistency of pound cake. Rub the butter and sugar together; beat the eggs, then mix; add the molasses, then the flour and fruit. This will make 2 large loaves. Bake $1\frac{1}{2}$ hours with a slow fire; bake in pans with stems.

47. **Farmer's Fruit Cake.**—Two cups of dried apples, soaked over night, chop in the morning and cook well in 2 cups of molasses, either maple or Orleans; after the apples are done let them get cold; flour same as for other fruit cake. Make following batter: One cup of butter, 1 cup of sugar, 3 eggs, 1 cup of sour milk, 1 teaspoonful each of cinnamon and cloves, 1 tablespoonful of soda in milk and 5 cups of flour. Can add 1 cup of raisins, if you choose, with the apples. Bake in moderate oven.

48. **White Fruit Cake.**—Two cups of sugar, 1 cup of butter, 1 cup of sweet milk, $\frac{3}{4}$ cup of flour, 2 teaspoonfuls of baking powder, whites of 5 eggs, $\frac{1}{2}$ lb. sliced citron, 2 cups cocoanut, meats from 1 quart hickory nuts, or use almonds.

49. **Minnehaha Cake.**—One-half cup of butter, $1\frac{1}{2}$ cups of sugar, 1 cup of sweet milk, 3 eggs, 2 teaspoonfuls of baking powder, 3 cups of flour.

50. **Morangtarta.**—One pound of granulated sugar, whites of ten eggs, well beaten; one pound of almonds, grated and well dried by allowing them to stand over night; mix the sugar and almonds together and beat slowly into the whites of eggs. Put in a buttered pan sprinkled with a few bread crumbs and bake slowly for an hour. To be eaten with fruit and whipped cream. (Very Fine.)

51. **One Egg Cake.**—One egg, $1\frac{1}{2}$ cups of sugar, $\frac{1}{2}$ cup of butter, 1 cup of sweet milk, $2\frac{1}{2}$ cups of flour, $2\frac{1}{2}$ teaspoonfuls of baking powder.

52. **Queen Cake.**—Two cups of flour, 1 cup of sugar, 1 cup of milk, 2

eggs, 1 large tablespoonful of butter, 2 teaspoonfuls of baking powder; flavor to taste; beat the butter, sugar and eggs together; then add the milk and flour, mixed with the powder. Bake in shallow pans in quick oven.

53. **Sunshine Cake.**—Beat the yolks of 5 eggs thick with a cup of granulated sugar; a pinch of salt and $\frac{3}{4}$ cup of flour, which has been sifted with $\frac{1}{2}$ teaspoonful of cream of tartar; add to it carefully the whites of 7 eggs, whipped very stiff; flavor with lemon or orange.

54. **Tea Cake.**—One tablespoonful melted butter, 1 egg, 1 cup sugar, 1 teaspoonful baking powder, $\frac{3}{4}$ cup milk, 2 cups flour.

55. **Velvet Cake.**—One-half cup of butter, $1\frac{1}{2}$ cups pulverized sugar, whites of 4 eggs, 1 cup of sweet milk, 2 cups of flour, $\frac{1}{2}$ cup of cornstarch, 1 large teaspoonful of baking powder, vanilla.

56. **White Loaf Cake.**—Two cups of sugar, 1 cup of butter, 1 cup of sweet milk, 3 cups of flour measured before sifting, 3 rounding teaspoonfuls of baking powder, whites of 9 eggs; measure with a pint cup; flavor to taste; ice with 2 cups of sugar and the whites of 3 eggs; add nearly a cup of boiling water to sugar, and cook until it will break in water, then pour it slowly with left hand over well beaten whites, while beating hard with the right hand.

57. **White Cake.**—One-half cup of butter, $1\frac{1}{2}$ cups of sugar, $\frac{2}{3}$ cup of milk, 2 teaspoonfuls baking powder, 2 cups of flour and the whites of 4 eggs, well beaten and added last; flavor to taste.

58. **Washington Cake.**—One and three-fourths cups of flour, 1 cup of sugar, $\frac{1}{3}$ cup of butter, 1 egg, $\frac{1}{2}$ cup of sweet milk, 2 teaspoonfuls baking powder, 1 teaspoonful of lemon extract. Bake in three round tins; when done, put a layer of apple sauce between and on top of the cake. Jelly or jam may be substituted, and the cake served with whipped cream or sauce.

59. **Cream Cake.**—One cup of sugar; 2 eggs, well beaten in a cup, fill up with sweet cream; 2 cups of flour; 2 teaspoonfuls of baking powder. Bake in 2 layers.

Filling.—One and one-fourth cups of sugar, $\frac{1}{4}$ cup of milk, pinch of salt, 4 teaspoonfuls of cocoa, butter size of walnut, vanilla to flavor; cook soft and beat while cooling and spread on cake.

60. **Custard Cake.**—One teacupful of sugar, 3 eggs, 3 teaspoonfuls melted butter, $\frac{1}{3}$ teacup of sweet milk, 1 teacup of sifted flour, $1\frac{1}{2}$ teaspoonfuls of baking powder; sift the baking powder in the flour; beat the whites and yolks separately; add the butter, melted just enough to measure well.

Custard.—One pint of milk, 2 eggs, 2 tablespoonfuls of flour, 1 tablespoonful of cornstarch.

61. **Chocolate Caramel Cake.**—One and one-half cups of granulated sugar, $\frac{1}{2}$ cup of butter, 1 cup of milk, 3 cups of sifted flour, 3 teaspoonfuls of baking powder, beaten whites of 4 eggs. Bake in layers.

Filling.—Whites of 4 eggs beaten to a stiff froth, $1\frac{1}{4}$ lbs. of confectioner's or XXXX sugar added gradually. Flavor with 1 teaspoonful of vanilla. Spread on layers and allow to stand until cold. Melt 2 squares of Baker's chocolate in a small dish over the teakettle and spread very lightly over the hardened white icing. Cocoanut may be used instead of chocolate, if preferred, but must be put on before the white icing hardens.

62. **Fig Cake.**—Two cups of sugar, 1 cup of butter, $3\frac{1}{2}$ cups of flour, $\frac{1}{2}$ cup of sweet milk, whites of 7 eggs, 2 teaspoonfuls of baking powder. Bake in layers.

Filling.—One pound of figs, chopped fine and put in a stew pan on stove; pour over it a teacup of sugar. Cook all together until soft and smooth. Let cool and spread between layers.

63. **Cream Puffs.**—One cup of boiling water poured on $\frac{1}{2}$ cup of butter; 1 cup of flour, stirred into the boiling water; boil 2 minutes, let cool, then add 3 eggs unbeaten and beat well; bake $\frac{1}{2}$ hour, slowly at first. The puffs will fall if not baked enough. Bake on buttered tins until a golden brown.

Custard.—One cup of milk, $\frac{1}{2}$ cup of sugar, 1 egg, 3 teaspoonfuls of flour. Cut a hole in the side of puff and fill with custard.

64. **Breakfast Cake.**—One cup of sugar, 2 cups of flour, $\frac{3}{4}$ cup of butter; rub well with hands and set aside $\frac{1}{2}$ cup of the mixture; in the remainder put one egg, 1 cup of sweet milk, and 2 teaspoonfuls of baking powder in enough flour to make a stiff batter. Put in shallow pan and sprinkle the $\frac{1}{2}$ cup of crumbs over the top. Bake in a moderate oven.

65. **Apple Cake.**—Make a thick batter of 2 cups of flour, $\frac{1}{2}$ teaspoonful of soda, 1 teaspoonful of cream of tartar, $\frac{1}{4}$ cup of butter, 1 egg, 1 scant cup of milk. Put it in a long shallow pan and press lightly into the top wedges of peeled, quartered and cored apples; 4 apples will be all that are needed for the cake. Sprinkle 2 tablespoonfuls of sugar over the top and bake brown. Serve with cream or soft sauce.

66. **Pork Cake.**—One pound fat pork, 1 lb. seeded raisins, 1 lb. seeded dates, 1 lb. currants, 1 lb. figs, 1 teaspoonful cinnamon, 1 teaspoonful ground cloves, 2 cups molasses, 1 cup sugar, 1 teaspoonful soda, 8 cups flour, 1 pint of hot water poured over the flour and let cool. Mix all together and bake.

67. **Roll Jelly Cake.**—One cup sugar, 1 cup flour, 3 eggs, 3 tablespoonfuls sweet milk, $\frac{1}{2}$ teaspoonful soda, 1 teaspoonful cream of tartar. Bake and when done spread with jelly, roll up and wrap a napkin around it.

68. **Chocolate Loaf Cake.**—Two cups brown sugar, $\frac{1}{2}$ cup butter, creamed, 2 eggs, 1 tablespoonful vanilla, $\frac{1}{8}$ cake Baker's chocolate, $\frac{1}{2}$ cup buttermilk, $\frac{1}{2}$ teaspoonful soda in the buttermilk and when foaming add $\frac{1}{2}$ cup boiling water and pour quickly over the grated chocolate; 3 cups sifted flour, $\frac{1}{2}$ teaspoonfuls baking powder.

69. **Spice Cake.**—One cup of sugar, 1 cup of molasses, $\frac{1}{2}$ cup of butter and lard mixed, 1 cup of sour milk, 2 eggs, 3 cups flour, 1 teaspoonful each of cloves and cinnamon, 2 teaspoonfuls of soda. Bake in 4 layers.

70. **Johnny Cake.**—

“Two cups Indian, one cup wheat,
One cup sour milk, one cup sweet,
One cup good eggs that you can eat,
One-half cup molasses, too,
One-half cup sugar add thereto,
Salt and soda, each a spoon,
Mix up quickly and bake it soon.”

71. **Maple Cake.**—One cup molasses, 1 cup dark maple sugar, 1 cup buttermilk, 2 large tablespoonfuls shortening, 1 tablespoonful ginger, 2 small teaspoonfuls soda, flour to make not too stiff.

72. **Dolly Varden Cake.**—One cup sugar, 1 cup of milk, 1 tablespoonful butter, 2 cups flour, 3 teaspoonfuls baking powder. Bake in two layers, leaving enough in the dish for one of them, to which add $\frac{1}{2}$ cup currants and 1 teaspoonful each of ground cinnamon, allspice and cloves. Put the layers together with frosting flavored with lemon.

73. **Good Almond Cake.**—One cup coffee “A” sugar, $\frac{1}{2}$ cup butter

(small part lard), $\frac{1}{2}$ cup milk or water, whites of 3 eggs, $1\frac{1}{2}$ cups flour, $1\frac{1}{2}$ teaspoonfuls baking powder; bake in 3 layers.

74. **Layer or Loaf Cake.**—One cup granulated sugar, scant $\frac{1}{2}$ cup butter, 2 eggs, saving white of one for frosting, $\frac{2}{3}$ cup milk, $1\frac{3}{4}$ cups flour, 2 teaspoonfuls baking powder and flavoring. This cake is a standby for all occasions and will keep moist for several days. Cocoa may be added for solid chocolate cake.

75. **Spice Cake.**—One cup sugar, $\frac{2}{3}$ cup butter, 2 eggs, $\frac{1}{2}$ cup molasses, 1 cup sour milk, $2\frac{1}{2}$ cups flour, 1 teaspoonful each of soda, cloves, cinnamon and a little nutmeg. If fruit is added this makes a very good fruit cake.

76. **Cheap Fruit Cake.**—One cup sugar, $\frac{1}{2}$ cup butter, 1 cup sour milk, 1 teaspoonful each cinnamon, cloves, nutmeg and soda, 2 cups flour, 1 cup raisins.

77. **Lightning Clouse.**—Sift together in a bowl, 1 cup sugar, 1 cup flour, 1 teaspoonful baking powder. Fill a cup $\frac{1}{4}$ full melted butter, break 2 eggs into this, fill cup with milk, add to dry measure, mix thoroughly and bake in two layers. Filling of whipped cream. This is a very good quick cake.

78. **Surprise Cake.**—Take one egg, 1 cup of sugar, 1 cup of butter; beat all together; then take a cup of sweet milk with two teaspoonfuls of cream of tartar and 1 teaspoonful of soda dissolved in it; then mix all together and thicken with flour. If desired, a little less soda and cream of tartar may be used. You will be surprised to see what a nice cake this makes.

79. **Plain Cake.**—One cup sweet milk, 1 cup sugar, $\frac{1}{2}$ cup molasses, $\frac{1}{2}$ cup butter, 3 cups flour, 1 cup raisins, 2 teaspoonfuls cream of tartar, 1 teaspoonful of soda, salt, cloves, cinnamon and nutmeg; add milk and soda just before putting into oven.

80. **Devil Cake.**—One egg, $\frac{1}{2}$ cup sugar, $\frac{1}{2}$ cup sweet milk, $\frac{1}{3}$ cup grated, unsweetened chocolate; cook until thickened and let cool. Cream 1 cup sugar with $\frac{1}{2}$ cup butter; add 2 eggs beaten separately, $\frac{1}{2}$ cup sweet milk, 2 cups flour, $\frac{1}{2}$ teaspoonful vanilla, $\frac{1}{2}$ teaspoonful soda dissolved in milk; mix all thoroughly and add chocolate paste; beat well; bake in layers and white frost it.

FROSTINGS, ICINGS AND FILLINGS.

1. **Chocolate Filling for Cake.**—Three-fourths cup of sweet milk, 1 cup of sugar, $1\frac{1}{2}$ cakes of sweet chocolate, 2 teaspoonfuls of lemon extract. Boil until thick.

2. **Marshmallow Filling or Icing.**—Put $\frac{1}{4}$ cup of water and one cup of granulated sugar over the fire together and boil until it forms a soft ball when dropped into cold water. Now pull apart $\frac{1}{2}$ pound of marshmallows, put them into a double boiler with 2 tablespoonfuls of hot water and stir until melted. Then pour the hot syrup gradually into the marshmallow mixture, beating all the time; add a teaspoonful of vanilla and beat until cold.

3. **Icing Without Boiling.**—Butter the size of a walnut; the white of 1 egg, not beaten; enough pulverized sugar to spread nicely, according to the size of the egg. Mix all together until smooth. Put on cake when cold.

4. **Caramel Icing.**—One cup of brown sugar, $1\frac{1}{2}$ cups of maple sugar, $\frac{1}{2}$ cup of butter, $\frac{3}{4}$ cup of milk, 1 pound pecan nuts, 2 tablespoonfuls vanilla; boil together 10 minutes the butter, milk and sugar; add the chopped nuts



(Photographed especially for this book.)

NO. 6. A KITCHEN CABINET AND CONVENIENCES IN A MODERN KITCHEN.

In the kitchen most women take too many steps in preparing meals or doing their ordinary baking. Much of this work may be accomplished while sitting on a stool which should be in every kitchen. Besides showing all the conveniences gathered in one spot for comfortable working this illustration shows utensils in readiness for bread making—the bread mixer to the left. Note the accurate measuring cup which is divided into halves, quarters and thirds and is very important to use in all cooking. In fact, *there is no such thing as luck in cooking* in these days and accurate measurement is absolutely necessary. With all supplies and utensils in one place much labor and drudgery are saved in the kitchen. Note Recipe and Expense Cards at left.

and boil 3 minutes longer; remove from fire and add vanilla; stir until cool, then spread on the cake.

5. **Boiled Icing.**—The whites of 2 eggs, 2 cups of granulated sugar, citric acid the size of a pea, a few drops of vanilla. Barely cover the sugar with water, and boil until it hardens in water. Pour it slowly into the beaten whites of eggs, beating hard all the time; add citric acid dissolved in a few drops of hot water and the vanilla. Beat until cool and of proper consistency to spread on cake.

6. **Icing for Cookies.**—Take 1 cup of sugar and boil until it will get hard. Pour over the well-beaten white of 1 egg; stir until cool.

7. **Chocolate Cream Frosting.**—White of 1 egg beaten to a stiff froth, and an equal quantity of cold water; add confectioner's sugar until thick enough to spread; flavor with vanilla; spread $\frac{1}{2}$ inch thick on cake; melt $\frac{1}{2}$ cake of German sweet chocolate over hot water; add teaspoonful of boiling water to chocolate, beating well, and pour it over the frosting on the cake; it will remain soft and creamy for a week, cutting without breaking, and is delicious.

8. **Maple Caramel Frosting.**—Add 1 cup of cream to 2 cups of broken and rolled maple sugar. Boil until it hardens in water (it will take about fifty minutes); beat when half cool until it becomes creamy, and then spread on cake.

9. **Lemon Jelly Filling.**—One-fourth pound of butter, 4 eggs, juice of 4 lemons and grated rind of two, $\frac{3}{4}$ cup white sugar; mix all well together and boil 1 minute, stirring all the time; when cold spread between cakes.

10. **Custard Filling.**—One cup milk, yolks of 4 eggs, $\frac{1}{2}$ cup sugar, 1 dessert spoonful of flour, $\frac{1}{2}$ pound almonds, reserving 20 split for putting on icing on top of cake. Add the almonds chopped when the filling is cold and put between layers of cake. Ice as desired.

MEATS, POULTRY, GAME, FISH, OYSTERS AND CROQUETTES.

Some hae meat and canna eat,
And some would eat that want it;
But we hae meat, and we can eat,
Sae let the Lord be thankit.

—Burns.

The sauce to meat is ceremony; meeting were bare without it.—*Macbeth*.

HOW TO SELECT GOOD MEAT AND POULTRY.

Beef.—Good beef is elastic so that if it be pressed with the finger no impression will remain. If the meat be in poor condition the lean part will usually be of a dark color and inelastic.

Mutton.—The lean part of good mutton is of a dark, bright crimson red; the fat is firm and white. The lean part of bad mutton is of a brownish color with a bad smell; there is little fat and it is flabby and yellowish.

Pork.—The fat part of pork should be firm and white; the lean should be of a fine grain; and the skin cool and thin. Should the fat contain kernels the pork should be avoided for the pig was diseased when killed. Pork should not be kept more than a day or two before it is cooked for it will not keep long without salting. Great care should be exercised that pork be thoroughly cooked or there will be danger of disease.

Veal.—Veal will spoil quickly and should not be kept more than two days in summer nor four in winter.

Turkeys.—A young cock-turkey has smooth, black legs with short spurs. Sometimes dealers cut and scrape the spurs of old turkeys so as to deceive one, hence they should be carefully examined. The beak of an old turkey is hard while that of a young bird is somewhat soft. The legs of an old hen-turkey are red and rough. If the turkey is in poor condition the eyes will be dim and sunken and the feet dry and stiff, while if it be in good condition the eyes will be bright and full and the feet soft and pliable.

Fowls.—Select a fat fowl for any purpose. The skin should be transparent and if the bird is young and tender the skin under the wing or leg may be easily torn. A young cock will have short spurs. A fine bird will have a full fat breast and a smooth comb.

Ducks.—If the duck has been recently killed the feet and legs will be soft and pliable but if it be stale they will be dry and stiff. Freshness of the eyes is a good indication. An old duck will generally be thin and lean while a young bird is generally plump. The tame duck has rather large feet that are of a dusky yellow while the feet of the wild duck are smaller and of a reddish color.

Geese.—The feet and beak of an old goose will generally be red and bristly, while those of a young goose will be yellow with few bristles. When stale the feet and legs are dry and stiff; when fresh they are pliable and soft. The breast of a young bird, as with all poultry in good condition, is plump and the flesh whiter than that of old birds.

A FEW SUGGESTIONS CONCERNING THE COOKING OF MEATS AND POULTRY.

Salt meats and meats used for soup should be put to cook in cold water; but otherwise, fresh meat should be put on in boiling water. Cold water extracts the juice while hot water quickly cooks the outer surface of the meat and so retains the juices. Put a piece of red pepper in the water to prevent the odor which arises from boiling meat and turn the meat frequently that it may cook evenly on all sides. Carefully remove all scum as it arises. The meat should be kept boiling constantly but very gently. Allow twenty minutes for each pound of meat.

When roasting meat in the oven it should be frequently basted, that is, the juices should be dipped and poured over it with a spoon. Keep the fire at a uniform heat.

In broiling, have the gridiron hot before putting on the meat. Turn it over as soon as it sears.

Do not salt meat until it is nearly done as salt extracts the juices. The juices of meat are also extracted by allowing them to remain wrapped in paper when purchased. The meat should be immediately unwrapped.

In cooking an old fowl or a tough piece of meat, add a pinch of soda or

a spoonful of vinegar to the water in which they are boiled to aid in making them tender.

Frozen meats should be laid in cold water to thaw out shortly before using.

When roasting meat, use either tripods or clean pieces of wood to keep it out of the juices. Keep a pan of water in the oven to prevent scorching.

In warm weather mutton, veal and pork may be kept fresh for several weeks by laying them in sour milk. The meat should be entirely covered and the milk changed when mould appears. Wash the meat in cold water before using.

Salt pork may be freshened by soaking it over night in sweet milk and water.

A nice gravy is made by adding the meat gravy to some flour and butter which have been rubbed together and browned in the skillet.

The garnishes for meat are slices of lemon, parsley, sliced beets, sliced carrots and currant jelly.

MEATS AND POULTRY.

1. **Baked Veal Chops or Cutlet.**—Put in a roasting pan and season with pepper and salt, dust heavily with flour and put small pieces of butter on top. Then cover with water and bake one hour.

2. **Breaded Ham.**—Cut 1 pound of ham in slices $\frac{1}{4}$ inch thick; lay in hot water for 30 minutes, drain and wipe dry, dip in beaten egg, then in rolled bread crumbs and broil.

3. **Creamed Beef.**—Melt a lump of butter the size of an egg in a frying pan, then add cold roast beef cut in thin slices or chipped dried beef and fry to a nice brown, then add a tablespoonful of flour and stir well; last of all add enough water or milk to make a nice cream; serve with or without toast as you like.

4. **Dressing for Stuffing Meats.**—Soak a loaf of baker's bread in cold water and squeeze as dry as possible. Cut a large onion up fine and mix with the bread and fry a light brown in butter, with plenty of salt and pepper and then add 2 well-beaten eggs and a little sage if desired.

5. **Veal Loaf.**—Three pounds veal, 3 eggs, $\frac{1}{2}$ pound ham, 1 cup cracker crumbs, $\frac{1}{2}$ cup milk, butter size of an egg, pepper and salt, a little water in the pan at first. Bake $\frac{3}{4}$ of an hour or longer.

6. **Beefsteak Roll.**—Prepare a bread dressing such as you use for chicken; pound a round steak a little but not very hard; spread the dressing over it; lap over the ends; roll the steak up tightly and tie; spread 2 spoonfuls of butter over it; put a little water in the pan, lay steak in and bake, basting often. In a brisk oven it will bake in 30 minutes. Make a brown gravy and serve hot, or it is nice when sliced cold.

7. **Chicken Tamales (A Mexican Dish).**—Mix 1 pint each of finely ground cooked chicken and finely ground fresh boiled ham; cut 2 large red peppers in halves, remove seeds, and place in sauce pan with boiling water and cook 5 minutes; remove, chop fine and add them to the meat; season with $\frac{1}{2}$ teaspoonful of salt and sauce from peppers. Place a sauce pan containing a cupful of chicken broth over the fire. Mix 4 tablespoonfuls corn meal with cold water; add it slowly to boiling broth; add $\frac{1}{2}$ teaspoonful butter; cook and stir till thick; season with salt to taste. Put some dried corn husks in warm water to soak for 30 minutes, remove, cut off even sizes, spread each out on a

dish. Cover with thin layer of meal paste; put a tablespoonful of the meat in the center lengthwise; fold the husk around it; twist the ends and tie. Place in a steamer and steam for an hour and a half or cover with chicken broth and cook one hour. Any kind of meat may be used instead of chicken.

8. **Braised Beef.**—Cut a round steak into suitable pieces for serving. Dip these in salt water, then in bread or cracker crumbs. Fry these pieces, just long enough to brown nicely, in a buttered pan. Put into a bake pan or dish and put in enough water to make the pan half full. Bake 90 minutes in a moderate oven.

9. **Boiled Ham.**—Changing the water once or twice, soak the ham for 24 hours. Put on to cook in boiling water with a little sage and a cup of vinegar. When very tender, remove the skin and black outside, sprinkle the fat side with sugar and bread crumbs, and brown in the oven.

10. **Ham Pattie.**—Chop fine some pieces of cold ham. One-half dozen boiled eggs, chopped and seasoned with salt and pepper. Put in a baking dish a layer of ham, then a layer of eggs, and then the sauce until dish is full. Sauce:—Mix together 1 tablespoonful of flour and 1 tablespoonful of butter and stir this into a cup of sweet milk. Over the top layer of pattie, pour this sauce and spread with bread crumbs. Bake until a nice brown.

11. **Tasse Ham.**—Cut six hard boiled eggs in halves, crosswise; remove yolks; place cups thus made around edge of platter. While eggs are boiling, cook $\frac{1}{3}$ cup of fine bread crumbs in $\frac{1}{3}$ cup of milk to a smooth paste; add 1 cup of chopped ham, cooked, 1 egg slightly beaten, $\frac{1}{2}$ teaspoonful mustard; make into balls, set one in each half egg cup. White Sauce:—Two tablespoonfuls each of butter and flour, 1 cup of milk and 1 teaspoonful of salt. Turn this into center of platter, sift yolks over it and set dish in oven until eggs are hot. Garnish with parsley. You can use mushrooms in the white sauce if so desired.

12. **Deviled Ham Rolls.**—Roll thin some light rich pastry and cut into four-inch squares; spread upon each square a spoonful of deviled ham, leaving about $\frac{1}{2}$ inch around the edge uncovered. Moisten the edges with cold water; roll each sheet of ham and pastry compactly, pressing the edges together. Brush with white of egg and bake. This is nice with a salad course.

13. **Stuffed Leg of Pork.**—Make deep incisions in the meat; mash fine a few boiled potatoes; add a chopped onion, cayenne pepper, salt and a little sage. Mix a piece of butter with this and fill the incisions; pull the skin down, and skewer over to keep the dressing from falling out. Roast slowly; when the meat is done pour the gravy into a pan, take off the fat and add a little brown flour; as soon as it boils up once, remove from the fire; serve with cranberry sauce.

14. **Veal with Oysters.**—Cut 1 pound of select veal into squares about the size of the oysters; fry nice and brown; when done add enough butter to make sufficient gravy and season. Pour over this 1 quart of oysters, well cleaned and drained, with 2 tablespoonfuls of flour stirred all through the oysters; pepper and salt; cover and let steam until the oysters begin to curl and the gravy is thickened.

15. **Curry Chicken.**—Cut up a chicken; slice an onion and fry in the skillet with a generous piece of butter; add a teaspoonful of curry powder. Put in chicken and fry just long enough to absorb the onion flavor. Grate 1 cocoanut and pour boiling water over it; strain through cheese cloth,

squeezing tight; add the chicken to cocoanut water; cook until meat drops from bones. If water boils away add more: salt the last thing: add a little flour and more curry powder if desired. Serve with hot boiled rice.

16. **Chicken Sauteing.**—Melt 2 tablespoonfuls of butter in a pan with a small chopped onion; do not let it brown. put into this a tender chicken cut into small pieces; season with pepper and salt. Let cook for 20 minutes, turning often; then dredge with flour, stir around well and add a scant pint of stock or water—boiling. Cover and place on the back part of the stove where it will simmer gently until done. Remove all grease from gravy and add a cup of cream; cook for 2 or 3 minutes and pour over chicken.

17. **Chicken Pie.**—Take a good sized chicken that is neither too fat nor too old; cut it up and remove all extra fat; wash it well and cook until tender, keeping the fat skimmed from the top of the kettle. Put the extra fat in a skillet and place on the back of the stove where it can slowly cook until all grease is extracted and when cold it may be used with other shortening to make the crust for the pie. The crust may be made in the usual way, lining the pan with an under crust; then add the chicken and 4 sliced potatoes; then the broth made into a nice gravy; put the top crust on and bake until it is a nice brown.

18. **Cleveland Chicken.**—Cut up a cooked chicken fine, a few potatoes cut in squares and bread crumbs; put on the stove 1 cup of milk, 1 tablespoonful of butter, 1 tablespoonful of flour, pepper, salt and a little parsley; mix with the other, sprinkle bread crumbs over the top and bake fifteen minutes.

19. **Old Point Comfort Chicken Terrapin.**—Boil a chicken until tender; remove bones; thicken the broth with a lump of butter rubbed in flour and then put the meat of the chicken back on the stove; add $\frac{1}{3}$ pound of butter, a dozen mushrooms, a little summer savory, cayenne pepper and salt. Boil and stir until tender; then add yolks of 3 hard boiled eggs, chopped fine; then sweet cream and serve hot.

20. **Chicken Croquettes.**—Boil a cup of milk with a lump of butter as large as an egg and a tablespoonful of flour; when cool add pepper and salt, a bit of minced onion, 1 cup of bread crumbs and 1 pint of finely chopped chicken; lastly, beat 2 eggs and work in, form in balls, roll in eggs and cracker crumbs and fry.

21. **Chicken Cutlets.**—Rub together 2 tablespoonfuls of flour and 1 of butter; add to them $\frac{1}{2}$ pint of stock; stir constantly until boiling and then add the yolks of 2 eggs. Take from the fire and add 1 pint of cold chopped chicken, a tablespoonful of parsley, 1 teaspoonful of salt, a little pepper and a grating of nutmeg. Mix and put aside to cool; when cold form into the shape of cutlets, dip in eggs and crumbs and fry. Turkey can be used the same way.

22. **Chicken and Macaroni.**—In a baking pan arrange layers of bits of chicken, macaroni and bread crumbs, the crumbs on top; season with salt, pepper and butter. Pour over a dressing made of 2 cups of stock, $\frac{1}{2}$ cup of cream and flour to thicken; bake 45 minutes.

23. **Sweetbreads and Peas.**—Soak 2 pairs of sweetbreads in cold salt water for an hour, then cook from 30 to 45 minutes. Take 1 can of French peas cooked and seasoned as for table, add the chopped sweetbreads, put in baking dish, cover with bread crumbs and a generous amount of butter, bake in hot oven 10 minutes or until brown.

24. **Liver Timbales.**—To a pint of cooked calf's liver, chopped fine and salted, add a cup of bread crumbs, 2 beaten eggs, 1 cup of milk, 1 teaspoonful of parsley, a few drops of onion juice and a tablespoonful of melted butter. Mix thoroughly and turn into molds and cook in a pan of warm water in a moderate oven for about 25 minutes. Serve with mushroom sauce.

25. **Stuffed Tripe.**—Clean and boil a large piece of fresh tripe, spread with a highly seasoned bread dressing, roll up and tie. Put it into a baking pan with $\frac{1}{4}$ cup of butter and a cup of hot water; cover and bake about an hour in a moderate oven, basting frequently.

26. **Nut Balls.**—Any cold cooked meat may be used. To each half pint of finely chopped meat add $\frac{1}{4}$ cup of chopped blanched almonds, 1 raw egg, $\frac{1}{2}$ teaspoonful salt and a pinch of white pepper. Mould this mixture into balls the size of a walnut; place in an agate baking dish; add $1\frac{1}{2}$ cups strained tomato, which has been seasoned with pepper, salt and celery salt or a little onion juice. Place in a moderate oven for 15 minutes; reduce and thicken by placing over the fire for a few moments. Serve this sauce poured around the balls. Garnish with parsley.

27. **A Ragout.**—Mix $\frac{1}{2}$ cup of cheese with 1 cup of chopped cold meat; season with pepper and salt and $\frac{1}{2}$ teaspoonful of anchovy paste; moisten thoroughly with gravy made with milk or stock; put in a baking dish; cover with a layer of bread crumbs sprinkled with bits of butter and bake about 20 minutes. It may be baked and served in individual ramekin dishes or patty shells.

28. **Pressed Tongue.**—Boil a medium sized tongue four hours very gently; remove the skin as soon as it is taken out of the boiling water; then slice into a chopping bowl and chop fine. Season well with pepper and salt. Put in a little more than $\frac{1}{4}$ teaspoonful of mace, and lastly add one cup of finely chopped English walnuts. The next day it will be ready to serve. If any other meat is used it will need to be moistened with a little of the liquid in which the meat was boiled.

29. **Dressing for Baked Fowl.**—Chop fine 6 or 8 slices of stale bread; season to taste with salt, pepper and sage; add 1 egg, well beaten, and 2 ounces butter; mix well together and moisten with 1 cup of hot water.

30. **Beef Loaf.**—Grind $1\frac{1}{2}$ pounds of steak; add a little salt; mix into this 1 cup of ground bread crumbs seasoned with salt, pepper and butter the size of an egg, rubbed in; add a cup of sweet milk with an egg beaten into it; mix all together like pie dough; form into a loaf; put into a buttered pie pan and roast and baste from 45 minutes to an hour.

31. **Deviled Ham Loaf.**—Take 2 spoonfuls of cracker or bread crumbs, $\frac{1}{4}$ pound of deviled ham, 2 cups of milk, using a portion to moisten the ham; stir in 2 eggs; add salt to taste; put into buttered pan and bake 1 hour in a moderate oven. Cut in thin slices, garnish with parsley and serve cold.

32. **Chop Suey.**—Fry $\frac{3}{4}$ of a pound of shredded white meat of chicken in butter until golden brown; add a little black bean sauce and then add to this the following ingredients, all chopped fine: $\frac{1}{2}$ pound of celery, $\frac{1}{4}$ pound of mushrooms, $\frac{1}{4}$ pound of bamboo root, $\frac{1}{4}$ pound onions and $\frac{1}{2}$ pound of water chestnuts. Fry all this together two minutes and add salt, pepper and a little water. Simmer three minutes longer and serve hot. This will serve six persons. The Chinese ingredients can be purchased at any Chinese store or restaurant.

GAME.

1. **Pheasants, Partridges, Quails, Etc.**—These are nice in flour and laid in a deep dish containing $\frac{1}{2}$ cup of drippings; add pepper and salt and lay nice slices of ham or bacon over the top. When done remove the ham and make a dressing of $\frac{1}{2}$ pint of cream and a dozen chopped oysters, to be added just before serving.

2. **A Delicious Rabbit Fry.**—Cut the rabbit in pieces and quickly wash in cold water. Do not soak it. Have frying pan very hot; then when you have seasoned the meat, roll it in flour and place in a pan, into which drop a tablespoonful of butter and one of lard. Cover with a pan and let the rabbit be very well done before you turn it over to brown on the other side. A rabbit fried in this manner will smell almost as nice as it will taste.

3. **Rabbit Stew.**—Cut up the rabbit, cover with cold water and put over the fire; add a teaspoonful of salt and boil until tender. Have ready hot biscuits broken open and laid on a platter and on each place a piece of the rabbit. Thicken the gravy with 2 tablespoonfuls of flour wet smoothly in a little milk; let it boil a minute, then add a cup of milk or cream and stir well. Pour this over the rabbit and biscuit and serve at once.

4. **Hasenpfeffer.**—After the rabbit has been in salt water for several hours, rinse with clear water. Boil until tender in water containing an onion in which are stuck about a dozen cloves. When tender take from liquor, roll in flour and fry brown in skillet, using equal quantities of butter and lard; just before removing from skillet, sprinkle over a little cinnamon and about 1 tablespoonful of vinegar (more or less to suit taste); cook closely; let smother for a few minutes; remove rabbit; put flour in skillet and brown in remaining grease; add liquor in which the rabbit was cooked to make a nice gravy; pour over rabbit.

FISH AND OYSTERS.

"Master, I marvel how the fishes live in the sea!"

"Why as men do on land; the great ones eat up the little ones."

—*Pericles.*

"Drenched in the sea, hold, notwithstanding, their freshness."—*Tempest.*

"Fruit of the wave! O, dainty and delicious!
Food for the gods! Ambrosia for Apicius!
Worthy to thrill the soul of sea-born Venus,
Or titillate the palate of Silenus!"

In selecting fish see that the eyes are full and not dull and sunken. The flesh should be firm and hard to the touch and should rise at once to the pressure of the finger.

The earthy or muddy taste may be removed by soaking in salt water shortly before using. The skin may be readily removed by pouring boiling water over it and letting it stand a few minutes. Lemon juice whitens fish.

Fish should be cooked the day they are bought. Fresh mackerel, especially, spoil very quickly.

In frying fish, put it into very hot lard and turn as soon as browned on one side. When browned on both sides move the skillet to the back part of the stove, cover and let cook slowly. Use plenty of lard but no butter.

Garnishes are parsley, sliced beets, lemon, lettuce and hard-boiled eggs.

1. **Baked White Fish.**—Fill the fish with a stuffing of fine bread crumbs and a little butter; then sew up the fish, sprinkle with butter, salt and pepper. Bake an hour and serve with egg sauce or parsley sauce.

2. **Boiled Fresh Fish.**—Tie the fish up in a cloth and plunge into salted boiling water. Boil very slowly, allowing eight minutes to the pound. When about half done add a little lemon juice or vinegar. When done, drain, dish carefully and pour drawn butter over it.

3. **Clam Stew.**—Drain off and strain the liquor from 25 clams; cut them up and place with the strained liquor in a stew kettle. Cut into small pieces 5 or 6 potatoes and a small onion; add these to the clams with half a cup of milk, butter the size of an egg, salt and pepper to taste. Stew until done; thicken with gravy and serve hot.

4. **Baked Codfish.**—Three eggs beaten separately, 1 pint of milk, 1 cup of shredded codfish; thicken milk as thick as for cream toast; put the yolks of eggs in while milk and fish are hot; add whites last. Bake 20 minutes.

5. **Fish a la Creme.**—One pint of cold cooked fish, picked in fine pieces; 1 pint of milk, yolks of 2 eggs, 1 small piece of onion, 1 sprig of parsley, 2 tablespoonfuls of flour, 1 tablespoonful of butter. Put milk on to boil in a double boiler; add to it the onions and parsley; rub the butter and flour together and stir into the boiling milk; cook 2 minutes; add the well-beaten yolks of 2 eggs; take from the fire and strain; add pepper and salt to taste. Put a layer of this same in a buttered baking dish, then a layer of fish, another of the same, and so on, having the last layer of the same; sprinkle the top lightly with bread crumbs and put in the oven until a nice brown.

6. **Baked Pickerel.**—Cleanse the fish thoroughly in salt water; split so it will lie flat in the pan; sprinkle with pepper, salt and bits of butter; pour into the pan enough water to keep from burning and bake about 45 minutes. Make a sauce in the proportion of a tablespoonful of flour, a tablespoonful of butter, and half a pint of milk or water; when boiled until smooth, stir in a tablespoonful of lemon juice and serve very hot.

7. **Lobster a la Newburg.**—Two pounds of lobster, yolk of 1 egg, 1 tablespoonful of butter, $\frac{1}{2}$ pint of cream, small wine-glass of sherry, a very little water. Stew lobster slowly with the butter and water for 15 minutes; stir egg, cream and part of the wine and mix with the lobster and stir 5 minutes. Add remainder of the wine just before serving.

8. **Oyster Dressing.**—One pint of oysters. Take the giblets of a chicken boiled until tender; crumb up a loaf of stale bread; heat 1 cup of milk boiling hot; pour the hot milk and water from giblets over the bread; season with salt, pepper and sage. Stir in with a spoon the oysters and 1 egg well beaten. This amount is enough to stuff one chicken.

9. **Oyster Cocktails.**—For one person, take four to six nice large oysters. Sauce:—one tablespoonful of horseradish, 2 or 3 tablespoonfuls of tomato catsup, a pinch of salt, also of Hungarian paprika, dash of tobasco sauce, a few drops of vinegar, also a few drops of lemon juice. Mix thoroughly and pour over the oysters. If oysters are served on the half shell, sauce is served in a sherbet glass, in middle of plate, surrounded by the shells.

10. **Curried Oysters.**—Drain the liquor from a quart of oysters and put it in a sauce pan; add $\frac{1}{2}$ cup of butter, 1 tablespoonful of curry powder, 2 tablespoonfuls of flour, well mixed; let boil; add oysters and a little salt; boil up and serve.

11. **Oyster Omelet.**—Add half a dozen eggs beaten very light to $\frac{1}{2}$ cup of cream; season with salt and pepper and pour into a frying pan with a tablespoonful of butter; drop in a dozen large oysters cut in halves or chopped fine with parsley and fry until light brown; double it over and serve immediately.

12. **Steamed Oysters.**—Wash and drain a quart of select oysters; put them in a pan and place in steamer over boiling water; cover and steam till oysters are plump with edges ruffled; place in heated dish with butter, salt and pepper and serve.

13. **Salmon Loaf.**—Beat 2 eggs, add 1 cup of bread crumbs, 2 tablespoonfuls of melted butter and the fish contained in a pound can of salmon, saving the liquor. Add pepper and salt to taste. Mix and steam in a buttered dish 1 hour. Sauce:—One egg beaten lightly, 2 tablespoonfuls of melted butter and 1 tablespoonful of cornstarch; after mixing stir in 1 cup scalding milk, cook a moment and add the liquor; pour this over the fish and serve.

14. **Turbot.**—Boil a bass or white fish and pick it to pieces; place it in a baking dish; pour over it a pint of milk, 2 eggs, 2 tablespoonfuls of butter, 1 tablespoonful of flour; season lightly; sprinkle cracker crumbs over the top and bake 20 minutes.

15. **Pigs in Blanket.**—Season large oyster with pepper; cut very thin slices of bacon and wrap around the oyster and fasten with a toothpick; fry until the bacon is crisp and brown. No salt will be needed as the bacon contains salt enough.

16. **Salmon Balls.**—One can of salmon free from bones and skin; 3 cold boiled potatoes, chopped fine; 1 egg, beaten and mixed with salmon and potato; salt and pepper; make into little cakes and roll in corn meal or cracker crumbs; fry in hot lard.

17. **Fried Oysters.**—Drain oysters, dip them in cracker meal, then in well beaten eggs, then again in cracker meal; then fry a nice brown in hot lard.

18. **Salmon Chops.**—Take the salmon from one can, remove the skin and bones and mash with a silver fork; put together 2 level teaspoonfuls each of butter and flour, $\frac{1}{2}$ teaspoonful of salt and a dash of cayenne; add the fish, a tablespoonful of lemon juice and 1 teaspoonful of chopped parsley. When cold form into chops, dip in egg and bread crumbs, put a piece of macaroni in the end for a bone and form in shape.

19. **Halibut Steak.**—Wash and dry 2 halibut steaks; butter a fish pan, lay thin slices of salt pork on it, place the steak on this, pour lemon juice over it and dust with salt and pepper; dip $\frac{1}{2}$ pint of oysters in melted butter, then in crumbs and place on fish. Put the second steak over the oysters and season as before, laying thin slices of pork on top. Bake 30 to 40 minutes, basting often with juice from the pan and lastly butter. Remove the pork from the top, cover with buttered crumbs, brown and serve.

20. **Creamed Fish.**—For 2 cups of cold fish or canned salmon flaked fine, make a cream sauce with a tablespoonful of butter and a tablespoonful of flour beaten together with $\frac{1}{4}$ teaspoonful of salt and a bit of red pepper. Pour a cup of milk on this and stir over the fire until it thickens; add the

fish with a tablespoonful of chopped parsley; pour into a buttered dish and cover with bread or cracker crumbs and bake a light brown.

21. **Codfish Balls.**—Pick apart one cup of fish and put it in a saucepan with one pint of raw cut up potatoes; cover with cold water and boil until potatoes are done; drain well. Wash and stir until light; season with pepper and a teaspoonful of butter. Stir in one egg, well beaten; shape with a tablespoon and fry in smoking hot lard.

22. **Hollandaise Sauce.**—Beat $\frac{1}{2}$ cup of butter until creamy, add yolks of 4 eggs one at a time and beat until blended. Add $\frac{1}{4}$ teaspoonful of salt, the juice of 1 lemon and a dash of cayenne. Beat until smooth, add $\frac{1}{3}$ cup of milk or stock and cook until thickened.

23. **Escalloped Oysters.**—One quart of oysters, 1 quart of rolled crackers or bread crumbs; put into a deep dish, putting alternate layers of oysters and crackers and small pieces of butter; season with pepper and salt. When dish is full, cover with milk. Bake 30 minutes.

24. **Frizzled Oysters.**—Dry a quart of oysters on a napkin, put butter in frying pan, when very hot put in oysters, season with pepper and salt; serve hot.

25. **Baked Shad.**—Make a stuffing of bread crumbs, pepper, salt, butter and parsley and mix this with the beaten yolks of 3 eggs and enough milk to moisten; fill fish and sew or fasten a string around it. Pour over it a little water and some butter and bake as a fowl; an hour or more is required to bake it. Boil up the gravy in which the fish was baked, put in a teaspoonful each of flour, catsup and lemon juice. Pour on as a dressing. To bake salmon, omit stuffing.

26. **Broiled Oysters.**—Dry the required number of large, selected oysters; place on a fine wire broiler, turning often; have some toast ready, butter the oysters, season with pepper and salt, place on the toast, put in the oven for a moment to heat, and serve.

27. **Baked Salmon.**—One can of salmon minced fine, 1 cup of cracker crumbs, 1 cup milk, 1 well-beaten egg, butter the size of a walnut. Bake in a quick oven and garnish with parsley. Serve hot.

28. **Salmon Croquettes.**—Take 1 large can of salmon, free it from the oil and bones and shred it carefully; sprinkle over it a little lemon juice and allow it to stand a few minutes; melt 1 tablespoonful of butter in a sauce pan, mix smoothly in 2 tablespoonfuls of flour, then add slowly 2 cups of milk and season with pepper and salt; then add to it the yolks of 2 eggs, well beaten with a tablespoonful of cream; add the fish and $1\frac{1}{2}$ cups of bread crumbs; cook 3 minutes, remove from fire and when cold make into croquettes; roll in crumbs, then in beaten egg and again in the crumbs; fry in deep hot fat.

29. **Oyster Rarebit.**—Add $\frac{1}{2}$ pound of grated cheese to 2 tablespoonfuls of melted butter. Remove the hard muscle from $\frac{1}{2}$ pint of oysters and cook until they are plump; drain and keep hot. Beat the yolks of 2 eggs until light and add $\frac{1}{2}$ cup of oyster liquor and the oysters and stir into the melted cheese. Serve on squares of toasted bread.

30. **Escalloped Salmon.**—One can of salmon, 3 cups cracker crumbs, butter, salt and pepper. Butter a baking pan and put in a layer of salmon and then a layer of cracker crumbs over which sprinkle some salt,

pepper and bits of butter; add another layer of salmon and cracker crumbs and pour over enough milk to come to the edge of the contents and bake.

CROQUETTES.

1. **Cheese Croquettes.**—The beaten white of 1 egg, $\frac{3}{4}$ cup of grated cheese, a dash of cayenne pepper and a little salt. Make into small croquettes and roll in cracker crumbs and egg and fry a delicate brown.

2. **Rice and Beef Croquettes.**—Add a little salt to $\frac{1}{2}$ cup of rice and cook. Chop the meat fine, take one part of rice to three parts of meat, season to taste; form into rolls, roll in crumbs, then in egg, then in crumbs, and fry in very hot lard. Add a little onion if desired.

3. **Macaroni Croquettes.**—Boil half a package of macaroni in salt water until soft. A pint of cold boiled beef, boiled until it shreds. Chop both together until very fine; season to taste with pepper and salt; roll into balls, dip in flour and brown in beef suet or butter. Beef suet, smoking, gives the croquettes a prettier brown without so much danger of burning as when browned in butter. This amount will make 16 croquettes.

4. **Salmon Croquettes.**—One can of salmon with liquor drained off, 2 cups of mashed potatoes (use while warm), 2 eggs, mustard, celery seed, nutmeg, ground cloves and allspice; 1 tablespoonful vinegar, 2 tablespoonfuls catsup, a little red pepper and salt. Form into any desired shape, roll in cracker crumbs and fry in hot lard. Try these. They are very nice.

5. **Veal Croquettes.**—Take 4 cups of cold chopped veal, pepper and salt, and a little lemon juice. One cup of white sauce, mix and let cool. When cool roll them in shape and then roll in sifted bread crumbs. Fry in hot fat.

6. **Rice Croquettes.**—To $1\frac{1}{2}$ cups of cold cooked rice, add 2 eggs, $\frac{1}{2}$ cup of flour, 1 tablespoonful of sugar and $\frac{1}{2}$ teaspoonful of salt. Mix well, and when cold mould and fry as other croquettes.

7. **Hominy Croquettes.**—To a pint of cooked hominy add 2 tablespoonfuls of milk; heat and add 1 tablespoonful of butter; pepper, salt, parsley and onion juice to taste; then add 2 beaten eggs and cook until thick; when cold form into croquettes and fry as other croquettes.

8. **Italian Croquettes.**—Take 1 cup of finely chopped vermicelli, make a sauce of $\frac{1}{4}$ cup each of flour and butter and a cup of strained cooked tomatoes. Add $\frac{1}{4}$ cup of chopped mushrooms, the vermicelli and season highly with salt and paprika. Shape and fry as other croquettes.

9. **Sweet Potato Croquettes.**—Work 1 tablespoonful of butter, pepper and salt to taste, into 1 pint of hot mashed sweet potatoes. When cold mould into shape, dip in egg then in crumbs and fry.

10. **Oyster and Veal Croquettes.**—Two cups finely chopped veal, 1 pint raw oysters chopped fine, 2 tablespoonfuls butter, yolks of 4 eggs, 6 tablespoonfuls powdered crackers and 2 teaspoonfuls onion juice. Soak the crackers in the oyster liquor; soften butter and mix all ingredients. Shape and dip in egg and cracker crumbs and fry.

11. **Potato Croquettes.**—To a pint of hot mashed potatoes, add 1 tablespoonful of butter, the yolk of one egg, salt and pepper, a little onion juice and a little parsley. Cook all together and then cool and make into balls and fry in hot lard.

SOUPS.

(Including Soup Stocks, Bouillon and Broths.)

“Let onion atoms lurk within the bowl,
And, half suspected, animate the whole.”
—*Sidney Smith.*

Always use cold water in making soups as the juices of the meat are thus extracted, while if the meat is put into hot water the outer part is quickly seared and the juices retained. Use a quart of water to a pound of meat and allow a quart of soup for three or four persons. It is very necessary that the soup be thoroughly skimmed and all grease should be removed. Long and slow simmering is necessary to get all the strength from the meat.

There are two kinds of soup or stock—white and brown. The white is made from either veal or fowls while the brown is made from beef.

In making vegetable soups cook the vegetables separately and add to the soup just before taking from the fire. Celery seed will be found an excellent substitute for celery. The best herbs for seasoning soups are sage, mint, tarragon, sweet marjoram, thyme, sweet basil, bay leaves, parsley, cloves, mace, celery and onions.

Scorched flour or burnt sugar are used to color soups. Season lightly at first for more may be added if desired.

Never put soups or gravies in tin or copper and it is best to use a wooden spoon.

1. **Asparagus Soup.**—Take a can of asparagus, 1 pint of cream or milk, 1 pint of white stock, 1 tablespoonful of chopped onion, 2 tablespoonfuls of butter, 2 tablespoonfuls of flour, 1 teaspoonful sugar and $\frac{1}{8}$ teaspoonful pepper. Cut off and lay aside the heads of asparagus, cut stalks into short pieces and put them on to boil in a stew pan with the stock. Put onion and butter in a small frying pan and cook slowly for ten minutes, then add flour; stir until mixture is smooth and frothy, but not brown. Add this, together with the sugar, pepper and salt, to the stock and asparagus and simmer for 15 minutes; then rub the soup through a sieve and return it to the stew pan. Add cream and asparagus heads and after boiling up once, serve without delay. In case fresh asparagus be substituted for canned, use two bunches. Cook them in the stock or water for 20 minutes. Remove the heads for later use and proceed with the cooking the same as when canned asparagus is used.

2. **Bean Soup.**—Boil 1 quart of beans until soft, rub through a colander to remove hulls. Return soup to the fire, season well with pepper and salt, and add a few spoonfuls of cream; serve with small squares of toast. Some prefer corn bread with bean soup. If desired a small piece of bacon may be boiled with the beans as it adds richness and flavor to the soup.

3. **Potato Soup.**—One quart of milk with a small onion scalded in it, 1 pint mashed potatoes, 1 heaping tablespoonful of flour and as much butter as you like; pepper and salt to taste.

4. **Tomato Soup.**—Heat, then mash fine 1 pint of tomatoes; add $\frac{1}{2}$ teaspoonful soda. Pour in 1 pint or more if desired. Season with salt, pepper, butter and a little sugar. Just before serving add rolled crackers.

5. **Noodles for Soup.**—One pint of flour, 1 teaspoonful of baking pow-

der, salt and as much water as 1 egg shell will hold; roll thin, cut into narrow strips, dry them and boil in the soup for 10 or 15 minutes.

6. **Tomato Bisque.**—One quart milk, 1 quart tomatoes, 1 tablespoonful butter, 1 teaspoonful soda, 1 tablespoonful flour, pepper and salt. Cook and strain the tomatoes. Place the butter in basin, when hot rub in the flour, then add the milk slowly. When ready to serve add soda to tomatoes, then the thickened milk. Serve with whipped cream. A stick of celery boiled with tomatoes improves the flavor.

7. **Celery Soup.**—One head celery, 1 pint of milk, 1 pint of water, 1 tablespoonful rice, 1 tablespoonful butter, 1 tablespoonful flour, 1 tablespoonful chopped onion, $\frac{1}{2}$ teaspoonful pepper, $\frac{1}{2}$ teaspoonful salt. Mash and scrape the celery, cut into half-inch pieces, put it into a pint of boiling water (salted) and cook until very soft. Mash in the water in which it was boiled. Cook the onions with the milk in a double boiler, ten minutes, and add it to the celery. Rub all through a strainer and put it on to boil again. Cook the butter and flour together in a small sauce pan until smooth, but not brown, and stir into boiling soup. Add pepper and salt; boil 5 minutes and strain into tureen. Serve very hot.

8. **Soup Stock.**—Five and a half quarts of cold water, 1 shin of beef, $1\frac{1}{2}$ tablespoonfuls of salt, 1 onion with several cloves stuck in it, 1 carrot, 1 sprig of parsley, 1 stalk of celery or $\frac{1}{2}$ teaspoonful of celery seed, 1 turnip. Pour water on the meat, add pepper and salt, place on the back of the stove to heat through slowly; in about 30 minutes put over a hot fire and when it begins to steam, skim and cover closely; put over a moderate fire, allowing it to simmer (not boil) for three or four hours; add vegetables, allow it to boil one hour longer, then take from the fire and strain; when cold take grease from the top and it is ready for use.

9. **Bisque of Oysters.**—One pint of oysters, 1 pint of milk, 1 tablespoonful flour, 1 tablespoonful butter, yolk of one egg, pepper and salt to taste. Drain the oysters, adding to the liquor enough cold water to make 1 cup of liquid. Chop half of the oysters fine; bring the liquor to a boil, skim, add the chopped oysters and simmer ten minutes. Scald the milk, rub the flour and butter together until smooth, add to the milk and stir until it thickens. Add the whole oysters to the oyster liquor and as soon as their edges curl, remove all from fire; add the beaten yolk of the egg to the milk; take at once from the fire and mix with the oysters and their liquor. Season and serve at once.

10. **Vegetable Soup.**—Make nice stock with soup bone, 6 potatoes cut in dice, $\frac{1}{2}$ head cabbage, 2 onions cut fine, 2 pieces celery cut fine, $\frac{1}{2}$ cup rice, 3 tomatoes or $\frac{1}{2}$ can.

11. **White Soup.**—Boil 2 quarts of meat broth; beat 3 eggs well; 2 cups milk; 2 spoonfuls flour; pour these gradually through a sieve into the boiling soup; salt and pepper to taste.

12. **Clam Soup.**—Chop fine the required number of clams, then cook in a little water with butter, salt and pepper; when almost done, put in milk or cream and in soup enough for 4 persons put 1 cup of rolled crackers. Serve hot.

13. **Split Pea Soup.**—Take 2 pounds of split peas, wash and put in sauce pan with 2 quarts of water and boil for an hour; drain off the water and add 4 quarts of good strong stock, a ham bone and 1 onion and 1 carrot chopped

together. Let all boil together slowly for 3 or 4 hours, put through a sieve, season to taste and serve with toasted bread.

14. **Tomato Soup.**—Take 1 can of tomatoes, 3 small onions and a pint of water; stew for 1 hour, remove from stove and strain through a sieve; add pepper, salt, butter size of a walnut, small pinch of soda, 1 cup of milk; let come to a boil; crumble into this 4 soda crackers.

15. **Cream of Celery Soup.**—Boil 5 celery roots, if they may be had, in salt water until tender, then put through a fine sieve; heat 1 large cup of milk and 1 quart of stock. One large tablespoonful of butter and 2 tablespoonfuls of flour mixed to a cream, add this to the stock and celery and boil in double boiler until like cream.

16. **Bouillon.**—Chop 1 pound of beef (from the round) in very small pieces, and cover with a pint of cold water; add a sprig of parsley and a stalk of celery. Stir with a wooden spoon until the meat is almost white. Let it stand away from the fire for 30 minutes. Place it over the fire and bring quickly to the boiling point; add 1 teaspoonful of salt and a little pepper. Strain through a napkin, color with caramel and it is ready to serve.

17. **Beef Broth.**—One pound of lean beef, minced; 1 quart of cold water; 2 tablespoonfuls of rice; boil 1 hour, strain, and add salt and pepper to taste.

EGGS.

Including Various Ways of Cooking Eggs and Making Omelets.

"New laid eggs whose praise
Is sung by pullets with
Their morning lays."

—*Saxe.*

The fresher eggs are, the better and more wholesome they will be. Eggs over a week old may be fried but should not be boiled. To tell good from bad eggs they should be put into water. The good ones will lay on their side while those that turn with the large end upward are bad and should be rejected.

When eggs are plenty and cheap they may be preserved for future use by packing in salt, being careful not to allow them to touch. It seems to be a disputed question whether the large or small ends should be put down. To keep eggs for one's own use they may be dipped in melted wax or in flax seed oil or rubbed with lard, then packed in oats or bran.

The eggs of ducks and geese are too coarse to be eaten alone, though they are frequently used in cooking.

In breaking eggs they should be broken separately over a cup, to be sure they are perfect. The shells, washed, may be saved for settling coffee.

In poaching eggs the hot water should be salted and if a little vinegar is added it will aid in setting the whites.

Three minutes will boil an egg soft; five minutes will cook the white hard but not the yolk; eight to ten minutes will cook it hard clear through;

ten to fifteen minutes will cook it hard enough to slice or to serve with salads.

While boiling an egg eight or ten minutes renders it tough and harder to digest, if it be boiled for half an hour it will become tender and mealy and will be more easily digested than either raw or soft boiled eggs. When boiled for half an hour eggs may often be eaten by sick people when they cannot eat them if prepared in any other way. For this reason many doctors now recommend them for convalescents.

It has been claimed that eggs may be served in nearly six hundred different ways. However this may be, they form one of man's principal articles of diet and as they are generally obtainable we will give a number of the simpler ways of preparing them so that the housewife may perhaps find several new ways to serve this nutritious food.

1. **Creamed Eggs.**—Have a pan of a size that eggs cannot spread much. Butter it thoroughly and break eggs into it carefully. Put small pieces of butter, and a tablespoonful of cream, over each egg; salt and pepper; bake for about five minutes to have the eggs done; to have them hard and eat cold, bake longer.

2. **Egg Gems.**—Mix together 1 pint of bread crumbs and 1 pint of chopped meat; season with pepper, salt and a little butter; moisten with a little milk or water; heat this mixture thoroughly; fill gem or patty pans with the mixture; break an egg on the top of each and bake until the eggs are cooked. Cold roast beef or pork that is very lean will be especially nice for this dish.

3. **Ox Eyes.**—Cut off 2-inch pieces from a long, round loaf of bread; carefully cut the crust and scoop a portion out of the center of each piece; then place in a deep buttered dish; for 3 pieces, beat well together two eggs and add a pinch of salt and $\frac{3}{4}$ cup of milk; baste this over the bread, adding more until all the liquid is absorbed; carefully break an egg into the cavity in each piece and bake in a hot oven.

4. **Baked Eggs with Cheese.**—Butter and place a thin piece of cheese in the bottom of each egg dish; then break carefully an egg into each; for each egg take a tablespoonful of bread crumbs and grated cheese, a dash of paprika and salt sprinkled over each egg; and on top place a bit of butter and set in a hot oven until eggs are set; serve at once.

5. **Eggs in Tomatoes.**—Take fine tomatoes, one for each person to be served, and cut top off each; scoop out the seeds and break an egg into each tomato; season with salt, pepper and butter; sprinkle top with bread crumbs and bake in hot oven.

6. **Egg Nest Toast.**—Toast as many slices of bread as desired; dip quickly in salted water; butter and put into a baking pan in the warming oven. Take as many eggs as you have slices of bread; beat whites to a stiff froth; place a spoonful on each slice of toast, making a little dent in the center in which place the yolk, and set all in oven to brown lightly; be very careful not to break any of the yolks as they look very pretty in each nest.

7. **Deviled Eggs.**—Cut open 6 hard-boiled eggs and make the filling of the yolks. Mash fine with fork; add 1 teaspoonful of butter, $\frac{1}{2}$ spoonful of sugar, pinch of salt and pepper and mustard to taste; add enough vinegar to moisten, and fill the whites; a little chopped ham or lettuce or parsley or cheese may be added if wished. Served on lettuce leaves.

8. **Eggs a la Creole.**—Butter the molds well (muffin pans will do),

scatter finely chopped parsley in the bottom and sides; break an egg into each mold and steam or bake until the white is set. Have rice thoroughly boiled and piled in the center of an oblong dish, with eggs arranged around the edge. Pour the following tomato sauce over all: Two cups strained tomatoes, 1 tablespoonful of onion juice, 4 whole cloves, 4 whole peppers and 1 tablespoonful each of parsley, cornstarch, butter and sugar; let boil 15 minutes, then add 1 tablespoonful of capers. This is good to look upon as well as to eat and the sauce is delicious on deviled fish of all kinds.

9. **Shirred Eggs.**—Put 1 teaspoonful of cream into each baking cup, or grease gem pans and break an egg into each. Sprinkle with salt and pepper and put a small bit of butter on top when no cream is used. Bake in hot oven ten minutes.

10. **To Coddle an Egg.**—Put the egg into enough boiling water to cover it and at once remove the water from the stove so that the egg will cook slowly; leave it in the water for 7 or 8 minutes. When broken open the white should look like jelly.

11. **Baked Eggs.**—Break eight eggs into a dish that has been well buttered; add three tablespoonfuls of cream, salt, pepper and bits of butter; bake in oven for about twenty minutes; serve while very hot.

12. **Bird's Nest.**—After removing the shells from some hard-boiled eggs surround the eggs with forcemeat; bake or fry them until well browned; cut in halves and place in the dish with gravy.

13. **Curried Eggs.**—Fry two sliced onions in butter; add a pint of good stock or broth and a tablespoonful of curry powder; stew till onions are tender; add a cup of cream which has been thickened with rice flour or arrowroot; simmer a few moments; add eight or ten hard-boiled eggs which have been cut in slices and beat them well, but do not boil.

14. **Escalloped Eggs.**—Place a layer of bread crumbs moistened with meat broth or milk into a well-buttered dish; slice hard-boiled eggs and dip each slice in a thick drawn butter sauce to which has been added a well-beaten egg; put a layer of these slices of egg upon the bread crumbs; upon the layer of eggs put a thin layer of minced veal, ham or chicken; then add another layer of bread, etc., finishing with dry, sifted bread crumbs; bake until thoroughly heated. Another way is to mix equal parts of fine bread crumbs and minced ham and season with pepper, salt and melted butter; moisten this with milk until quite soft; butter the gem pans and fill half full of this mixture; then carefully break an egg upon the top of each; dust with pepper and salt and sprinkle finely powdered crackers over all; bake in the oven for eight minutes and serve at once.

15. **Frizzled Ham and Eggs.**—Prepare the skillet with butter or beef drippings and put into it some finely chopped, boiled or fried ham; pour over this from four to six well-beaten eggs and after it is heated through season with pepper and salt; stir all together; cook until brown and turn without stirring.

16. **Poached Eggs.**—Put water into a shallow stew pan over the fire and add salt and a tablespoonful of vinegar. The vinegar aids in "setting" the egg. When the water boils, carefully break the eggs into it one at a time, let them simmer two minutes, take them up carefully with a strainer and serve on toast cut into fancy shapes; garnish with parsley.

17. **Fried Eggs.**—The frying pan should be perfectly clean when frying eggs; butter, dripping or cottonseed oil may be used. As soon as the

pan is hot break the eggs into a cup and put them one at a time into the pan. As they fry raise the eggs from the bottom and give them a slight shake. Dip some of the hot butter over the yolk. They will be done in two or three minutes and should be taken out and the grease allowed to drain off. Serve on slices of bacon.

18. **Scrambled Eggs.**—Melt a tablespoonful of butter over a hot fire, add four beaten eggs and stir quickly for one or two minutes. Salt and pepper to taste. Some increase the quantity by adding three-fourths of a cup of milk. The butter should then be put in first and the other ingredients added and stirred until the whole thickens. When done it should be soft and creamy. Fine served on toast.

19. **Eggs a la Creme.**—Slice twelve hard-boiled eggs in thin rings. Spread bits of butter in the bottom of a deep baking dish and put in a layer of bread crumbs and then a layer of the sliced eggs; cover with bits of butter and dust on pepper and salt. Continue thus till the dish is nearly full. Crumbs spread with bits of butter should cover all the eggs. Over the whole pour a pint of sweet milk or cream and bake in a moderate oven.

20. **Eggs, Newport Style.**—Soak a pint of bread crumbs in a pint of milk. Stir the soaked crumbs with eight eggs beaten very light, beating five minutes. Have ready a sauce pan containing two tablespoonfuls of butter which is very hot but not scorching; pour in the mixture of eggs and crumbs and season with salt and pepper as the mixture is stirred and scrambled. Stir quickly with the point of a knife for three minutes or until the mixture is thoroughly heated. This should be served on a hot platter with squares of buttered toast.

21. **Stuffed Eggs.**—Cut six hard-boiled eggs in halves, take out the yolks and mash them fine; add one teaspoonful of cream, two of butter, two or three drops of onion juice, and pepper and salt to taste. Mix thoroughly and fill the whites with the mixture and put them together. To the filling which is left add a well-beaten egg. Cover the eggs with this mixture and roll in cracker crumbs. Put into boiling fat and fry a light brown.

22. **Cupped Eggs.**—Take the required number of cups and put into each a spoonful of highly seasoned brown gravy; have a sauce pan of boiling water on the stove and set the cups into it and when the gravy is heated drop an egg into each cup; take the sauce pan off the stove and keep it covered close until the eggs are cooked tender; dredge with salt and nutmeg. Serve in a plate covered with a napkin.

23. **Eggs a la Mode.**—Peel a dozen medium sized tomatoes and cut them up in a sauce pan; add salt, pepper and a little butter; when sufficiently boiled add six beaten eggs just before serving and stir one way for two minutes.

24. **Buttered Eggs.**—Heat and grease the muffin irons; break an egg into each ring; put salt, pepper and a lump of butter on each; set in the oven until slightly browned; remove with a fork and serve hot.

25. **Egg Fricassee.**—Warm and butter well some individual vegetable dishes, break a couple of eggs into each, season with pepper and salt, bake till the whites are set, serve in the dishes they are baked in and garnish with watercress.

26. **Dropped Eggs.**—Lay the muffin rings in a pan of boiling salted water and carefully drop an egg into each ring. When the whites have set

take the eggs up with care and lay each on a piece of buttered toast that has been moistened with hot water. Sprinkle each with salt and pepper.

27. Steamed Eggs.—Break the eggs into a buttered tin plate and set in a steamer over a kettle of boiling water and steam until the whites are cooked. They will keep their form better if broken into patty tins. If cooked in this way the whites will be light and tender and not leathery as when cooked other ways. Excellent for invalids.

28. Frizzled Eggs.—Put a pinch of salt and a little pepper into a tea-cup with a piece of butter the size of a hazelnut. Break in two eggs without stirring and set the cup in a pan of boiling water. When the whites are set, serve at once in the cup they were cooked in.

29. Potted Eggs.—Pound the yolks of a dozen hard-boiled eggs with anchovy sauce; mix to a paste with two ounces of fresh butter and season with two teaspoonfuls of salt and one teaspoonful of white pepper. Have ready some small pots and while filling with the paste strew in the chopped whites of the eggs. Cover the tops with clarified butter. Can not be kept long.

30. Eggs a la Suisse.—Spread two ounces of fresh butter over the bottom of a dish, cover with grated cheese and break eight whole eggs upon the cheese without breaking the yolks. Season with red pepper and salt if needed; pour a little cream over the eggs; sprinkle about two ounces of grated cheese over the top and place in a moderate oven for about fifteen minutes. Brown by passing a hot salamander over the top.

31. Eggs Brouille.—Cut two mushrooms into dice and fry for a minute in a tablespoonful of butter. Beat together six eggs, $\frac{1}{2}$ cup of milk or cream, 1 teaspoonful of salt and a little pepper and put them in a sauce pan. Add the mushrooms and two tablespoonfuls of butter and stir over a moderate fire until the mixture begins to thicken. Remove from the fire and beat rapidly until the mixture becomes thick and creamy. Heap the mixture on slices of toast on a hot dish, garnish with points of toast and serve at once.

32. Pickled Eggs.—Boil sixteen eggs for twelve minutes, dip into cold water and remove the shells. Into a stew pan put one quart of vinegar, one-half ounce of Jamaica pepper, one-half ounce of black pepper and one-half ounce of ginger; simmer for ten minutes. Put the eggs into a jar and pour the boiling vinegar over them and when cold tie a bladder over the jar to exclude the air. In a month they will be ready for use.

33. Eggs a la Bonne Femme.—Boil six large eggs for ten minutes and when cool carefully remove the shells; cut in halves and take out the yolks. Cut a small piece off the point of each of the whites that they may stand on end like cups. Make very small dice of cold chicken, ham, boiled beets and the eggs. Fill the whites to the brim with the dice and pile the dice high in the center—two of beets, two of ham and chicken and two of hard yolks. Put some lettuce on dish and arrange the eggs amongst it.

34. Breaded Eggs.—Cut some hard-boiled eggs into thick slices; salt and pepper each slice and dip it into beaten raw egg, then in powdered cracker crumbs or very fine bread crumbs and fry in very hot butter. Drain off all the grease and serve while hot.

35. Lunch Eggs.—Remove the shells from the desired number of hard-boiled eggs and cut the eggs lengthwise in halves. Remove the yolks and

crumble in a bowl. Add pepper, salt, mustard and a little melted butter; mix thoroughly, fill the whites with the mixture and serve.

36. Frothed Eggs.—Mix a tablespoonful of water with the juice of a lemon and beat it up with the whites of four eggs and the yolks of eight. Add a pinch of salt and sweeten to taste. Fry carefully (about four minutes) in an omelet pan. Have ready the remaining four whites whipped to a froth with a pound of fine sugar and flavored with lemon or vanilla. Put the omelet on a dish and heap the frothed egg over it. Brown lightly in the oven. For four persons.

37. Eggs in Paper Cases.—Make a seasoning with a cupful of fine bread crumbs, 1 clove of garlic, 1 teaspoonful of green onions, 1 teaspoonful of chopped parsley, pepper and salt. Paint thickly the inside of six small paper cases with melted butter and sprinkle a little seasoning into each. Break an egg into each case and cover with more of the crumbs. Bake in a gentle oven until the eggs are set, then serve in the cases. The eggs may be baked in small molds if desired and then turned on a dish before serving.

OMELETS.

As will be seen from the recipes, opinions differ as to the way an omelet should be made, but the following general directions have given good results.

The yolks should be beaten lightly. Much beating will make them too thin and it is said that twelve beats is the magic number. Add the milk, pepper, salt and flour if it is used, and lastly add the whites beaten to a stiff froth. The skillet should be as hot as possible without scorching the butter; after putting in a tablespoonful of butter the omelet should be poured in and it should begin to bubble and rise in flakes at once. It should be raised from the bottom occasionally with a thin, broad-bladed knife to prevent burning. Fold over as soon as the under side is set enough to hold together. Shake the skillet so as to free the omelet, slide it carefully on a hot platter and serve at once. It should be cooked in from three to five minutes.

1. Omelet.—One cup of milk, 3 eggs, 1 heaping tablespoonful of flour, and a little salt. Beat the eggs separately; stir milk, flour and eggs together; turn into a hot frying pan. Cook with plenty of butter; cut in quarters and fold over the other.

2. Potato Omelet.—One cup of cold mashed potatoes, put again through the ricer; 2 eggs, beaten separately; salt; drop from a spoon on a hot, well-buttered skillet; when brown turn and brown on the other side. Serve at once.

3. French Omelet.—Thoroughly beat 8 eggs separately; add to the yolks 8 tablespoonfuls of sweet milk, 1 tablespoonful of flour, 1 tablespoonful of good baking powder, pepper and salt; beat well together; then fold in lightly at the last, the beaten whites. Have ready a skillet with melted butter, smoking hot, and pour in the mixture; let cook on bottom, then put in oven from 5 to 10 minutes; serve at once.

4. Baked Omelet.—One cup of boiling milk, 6 eggs, 1 teaspoonful of cornstarch, mixed with a little cold milk; season with salt and pepper; beat the yolks of eggs light and pour upon them the boiling milk; stir in the cornstarch; whip in the beaten whites of eggs; have dish well buttered and hot; then pour in omelet and bake 12 minutes, or until set in middle. Serve at once.

5. **Jelly or Marmalade Omelet.**—Make a plain omelet and just before turning one half over the other spread it with jelly or marmalade.

6. **Ham Omelet.**—Make a plain omelet and sprinkle on some finely chopped ham just before turning one half over the other. Garnish with small pieces of ham.

VEGETABLES.

Serenely full the epicure would say—

“Fate cannot harm me—I have dined to-day.”

—*Sidney Smith.*

1. **Boston Baked Beans.**—Wash one quart of small white beans and soak them over night in soft water. In the morning drain and put with them 1 pound of fresh pork and boil until the beans begin to split open. Put them in a colander and rinse with cold water; then put about half of them in an earthen pot, lay in the pork, cover with the remainder of the beans. Mix 1 tablespoonful of molasses and 1 teaspoonful of mustard with a teacup of water and pour over the beans, adding enough boiling water to cover. Bake 4 hours, adding water occasionally.

2. **Corn Oysters.**—One pint of green corn, or canned corn will do; a small cup of flour, 1 well-beaten egg, 1 tablespoonful sweet cream, $\frac{1}{2}$ teaspoonful of salt. Mix well and fry like oysters in butter.

3. **Corn a la Southern.**—To one can chopped corn or kornlet add 2 eggs slightly beaten, $\frac{1}{8}$ teaspoonful pepper, 1 teaspoonful of salt, $1\frac{1}{2}$ tablespoonfuls melted butter and 1 pint scalded milk. Turn into buttered pudding dish and bake in slow oven until firm.

4. **Baked Corn.**—One can corn, 3 well-beaten eggs, 2 tablespoonfuls butter, 1 tablespoonful sugar, $\frac{1}{2}$ pint sweet milk, pepper and salt to taste; thicken with cracker crumbs and bake an hour. Very nice for a luncheon.

5. **Corn Pudding.**—One pint grated corn, 1 pint of milk or, if canned corn is used, then less milk, 1 tablespoonful of flour wet with milk, a pinch of salt, 2 tablespoonfuls sugar, 2 eggs, a few bits of butter on top. Bake about an hour in a slow oven. Stir when beginning to brown.

6. **Celery on Toast.**—Use coarse stalks of celery left from table; scrape them and cut into half-inch lengths; cover with water and cook very slowly for an hour. When nearly done let the water cook away until almost dry; cover with a cream dressing made of milk, butter and flour; season with pepper and salt and serve on small square slices of toast, keeping as hot as possible.

7. **Southern Cabbage.**—Chop fine a medium sized cabbage; put into a stew pan with boiling water to cover; boil 15 minutes; drain off all the water and add the following dressing: $\frac{1}{2}$ teacup vinegar, $\frac{2}{3}$ as much sugar, pepper and salt, $\frac{1}{2}$ teaspoonful salad oil or butter. When boiling hot add 1 teacupful cream or milk and one egg stirred together. Mix thoroughly and at once with cabbage and cook a moment. Serve hot. Very delicate and good.

8. **Cauliflower.**—Trim off the outside leaves from cauliflowers that are close and white, cut off the stalk flat at the bottom, let them lie in salt and water, heads down, for an hour before boiling. Put them in boiling water

with plenty of salt, skim it well and let cook slowly, and take up as soon as done. Too much cooking will spoil it. Cook 15 or 20 minutes, according to size of head. Serve with white sauce.

9. **Egg Plant.**—Pare the egg plant and slice it thin; sprinkle each slice with salt; lay slice upon slice and place a plate upon the top. The salt will drain out the disagreeable, bitter flavor. Half an hour before serving wipe each slice dry, dip into beaten egg, then in fine cracker crumbs and fry in plenty of hot butter; drain on a brown wrapping paper as they come from the frying pan, crisp and brown. Serve at once on a hot platter.

10. **Fried Mushrooms.**—Peel the mushrooms and put into butter; let them heat thoroughly through (too much cooking toughens them); season well with butter, salt and pepper and serve on buttered toast.

11. **Escaloped Onions.**—Fill a buttered pudding dish with alternate slices of onions and cracker crumbs (some prefer flour); season with butter, salt and pepper and pour over the whole a cup of milk. Bake slowly for 30 minutes or until the onions are done.

12. **Baked Onions.**—Boil the onions in salt water until tender. Put in a well buttered pan, cover with bread crumbs and bits of butter, salt and pepper and bake till done.

13. **Creamed Potatoes.**—Peel the potatoes and cut into half-inch dice. Cover with water and boil until tender. Drain and, for every pint of potatoes, add a cup of cream sauce made as follows: Cook 1 tablespoonful each of flour and butter together until they bubble; then add slowly, while stirring, 1 pint of hot milk with salt and a very little pepper, and the whole should be stirred and cooked to a thick cream. Left-over potatoes may be used for this dish. Place them in a stew pan and cover with milk, let simmer until milk is absorbed. Add the cream sauce.

14. **Stuffed Potatoes.**—Wash some fine large potatoes and bake until just done; remove from the oven and cut in halves and remove the inside; mash this until very smooth and season with butter and salt or cream and salt. Refill the shells; place in a shallow pan with uncut end down and return to oven for 15 minutes, or until a delicate brown, and serve immediately.

15. **Potato Fluff.**—Boil a dozen medium sized potatoes until tender. When done remove the skins and rub through a colander; add $\frac{1}{2}$ pint of hot milk or cream and 2 tablespoonfuls of salt. Beat until soft and then stir in carefully the well-beaten whites of 3 eggs. Heap in a baking dish and bake in the oven. Serve at once.

16. **Glazed Sweet Potatoes.**—Wash and pare half a dozen medium sized potatoes. Cook 10 minutes in boiling salted water; drain, cut in halves lengthwise, and put in buttered pan. Make a syrup by boiling $\frac{1}{2}$ cup sugar, 1 tablespoonful butter and 2 tablespoonfuls water, 3 minutes. Brush potatoes with syrup and bake 15 minutes, basting twice with remaining syrup.

17. **Spinach.**—Pick and wash the spinach with great care; drain it and throw it into boiling water; cook only a few minutes. Press out all the water; put spinach into a stew pan with a piece of butter, some salt and pepper, chopping it while cooking. Serve it with poached eggs, or hard-boiled eggs sliced or grated over the top.

18. **Squash Cakes.**—One cup of squash, sifted; 3 cups of flour or enough to mix thick with a spoon, 1 tablespoonful vinegar, 1 tablespoonful butter, salt, 1 egg, 1 cup milk, 2 teaspoonfuls baking powder. Bake in gem pans in a quick oven, or put on a pan by spoonfuls and bake as drop cakes.

19. **Salsify or Vegetable Oyster.**—Prepared as vegetable or soup this is a most delicious vegetable if properly cooked. They should be scraped under water or they will turn brown and they should be served as soon as taken from the stove. When used as a vegetable, cut lengthwise; cut in short pieces and cook until tender; drain; and season with butter, salt and pepper and cream, if desired. When used for soup, cut crosswise in thin slices and cook slowly for a long time. A little salt codfish added is a great improvement.

20. **Roasted Tomatoes.**—Dip the tomatoes into hot water and remove the skins; cut a piece from the stem end and scoop out a little of the pulp and place a small piece of butter in the cavity; dust with salt and a little cayenne pepper; replace the top; sprinkle with crumbs. Put a little piece of butter on each and place on a slice of bread; cut out with a biscuit cutter; put into a baking pan and bake in a moderate oven 15 or 20 minutes.

21. **Tomatoes a la Spanish.**—Peel tomatoes without scalding and cut into small pieces. To each pint of tomato add 1 small onion, $\frac{1}{2}$ teaspoonful salt, 1 teaspoonful sugar and $\frac{1}{2}$ small green hot pepper, leaving out seeds. Cut onion and pepper very fine and add 2 tablespoonfuls of vinegar. Eaten as a relish.

22. **Escalloped Potatoes.**—Peel and slice the potatoes and place a layer in a baking dish; sprinkle with flour; season with pepper, salt and butter; repeat this until pan is nearly full; cover with milk or cream and bake until potatoes are done.

23. **Potato Croquettes.**—Pass 6 boiled potatoes through a sieve and add to them 3 tablespoonfuls of ham grated or minced fine, a little grated nutmeg, salt and pepper to taste and chopped parsley; work the yolks of 3 or 4 eggs into this mixture, then make in balls and roll in bread crumbs and fry.

24. **Corn and Tomatoes.**—Cook the desired amount of tomatoes; then cut the corn from several cobs that have been boiled, add to tomatoes and season well; cook until corn is thoroughly heated; if the mixture is too thin, add more corn.

25. **Stewed Onions.**—Peel and boil the onions in salted water till tender, changing water twice while boiling; drain; add milk and flour enough to slightly thicken and season with butter, pepper and salt.

26. **Fried Egg Plant.**—Peel and cut in slices about $\frac{1}{2}$ inch thick, sprinkle with a little salt and let it stand 1 or 2 hours; then dip first in beaten egg, then in cracker dust and fry in hot butter; season with pepper and salt while frying; serve while hot.

27. **Potatoes on Half Shell.**—Bake 3 potatoes; carefully cut them in halves lengthwise; scoop out in hot bowl; mash and add 1 even tablespoonful butter, 1 tablespoonful hot milk, pepper and salt to taste; beat whites of 2 eggs stiff and mix; fill the skins with this mixture and brown in oven.

28. **Escalloped Corn.**—One can corn, 1 quart milk, $\frac{1}{2}$ pound rolled crackers, 1 tablespoonful butter, pepper and salt to taste; bake brown in a quick oven.

29. **Potato Rolls.**—Roll out a light biscuit dough about $\frac{1}{2}$ inch thick, then cut the potatoes about the same thickness and lay them on the crust and then roll up and put in the pan with your roast, having plenty of water in the pan; after roast is done, lift your roll out on a plate; then make a gravy and serve with roll. This is fine.

30. **Carrots with Milk.**—Wash, scrape and slice the carrots; boil soft,

drain, almost cover with milk, season with salt, pepper and butter; make thickening with milk and flour; stir in carrots, let boil a few minutes and serve.

31. **Potato Puffs.**—Stir 2 tablespoonfuls of melted butter into 2 cups of cold mashed potatoes; beat to a cream and then add 2 beaten eggs, 1 cup of milk and salt to taste; pour into a deep dish and bake in a quick oven.

32. **Escalloped Tomatoes.**—Put a layer of bread crumbs in a buttered dish, then a layer of tomatoes, then a layer of corn; sprinkle with pepper, salt and bits of butter (a little onion may be added if desired); then another layer of crumbs, another of tomatoes, corn and seasoning, until the dish is filled; the corn may be omitted, it is just as good without.

33. **Stewed Cucumbers.**—Slice cucumbers in pieces $\frac{1}{2}$ inch thick; boil 10 minutes in hot water; drain; then add milk, butter, pepper and salt; boil 5 minutes.

34. **Roast Pork and Lima Beans.**—Put roast of pork into large roast pan, leave room enough on each side for vegetables; cook 1 pint of lima beans tender, season with pepper and salt, then put in roast pan on one side of meat, potatoes on the other side; cook until all are done. The beans should be a light brown.

35. **French Stew.**—One pound fresh, lean pork, cut in pieces; 2 cups potatoes cut in dice; 3 good sized onions; water to cover the whole; pepper and salt to taste; cook slowly for 45 minutes.

36. **Fried Tomatoes.**—Slice thickly some ripe tomatoes, dip in beaten egg and cracker crumbs and brown in skillet with hot butter, turning often. After tomatoes are taken out make a dressing by adding milk and flour to what remains in skillet. Pour over tomatoes. Salt to taste.

37. **Corn Mock Oysters.**—One-half dozen ears of young sweet corn grated, 3 tablespoonfuls of sweet milk, 1 teaspoonful salt, 1 egg, 1 teacupful of flour; drop with a spoon into hot fat or butter and fry as oysters.

RELISHES, CHEESE, AND CHAFING DISH COOKERY.

Some are to be tasted, others to be swallowed, and some to be chewed and digested.—*Bacon.*

1. **Macaroni and Cheese.**—Boil $\frac{1}{2}$ box of macaroni in salted soft water, wash in cold water, grate a pound of cheese (cream preferred), mix cheese with 1 pint of bread crumbs; place macaroni in baking dish with cheese and crumbs over it; season with pepper, salt and butter; almost cover with milk and set in oven until brown.

2. **A Delicious Omelet.**—Four well beaten eggs, 1 cup of milk in which is soaked $\frac{1}{2}$ cup of bread crumbs, salt to season; mix all and pour in a hot frying pan in which is a generous piece of butter; cook slowly for 10 minutes and turn out on a hot platter.

3. **Nut Loaf (A Vegetarian Dish).**—One cup rolled crackers, 1 cup chopped English walnuts, beaten yolks of 2 eggs, season with pepper and salt, 2 teaspoonfuls sugar, stir in a large cup of sweet milk, fold in the beaten whites of 2 eggs, put in a deep buttered pan and bake in a slow oven.

4. **Deviled Eggs.**—Remove the shells from cold hard-boiled eggs, cut in halves and remove the yolks, put in a bowl; add pepper, salt, butter and vinegar to taste; mix it well with a spoon until smooth, then put the mixture back in the whites; fine for lunch.

5. **Cheese Foulder.**—To one cup of rolled crackers add $\frac{1}{2}$ pint of milk, beaten yolks of 2 eggs, small cup of grated cheese, whites of eggs beaten to a stiff froth; mix gently and bake 20 minutes in a quick oven.

6. **Plain Rarebit.**—One-half pound finely cut cheese, 2 tablespoonfuls butter, pepper to taste and a pinch of salt, $\frac{1}{2}$ cup of milk or cream, yolks of 2 eggs; melt the butter and add cheese, salt and pepper; when the cheese is partly melted, add gradually the cream and the egg yolks slightly beaten; pour this over a piece of toasted bread cut in small squares.

7. **Creamed Chicken and Mushrooms.**—Melt 2 tablespoonfuls of butter with 2 of flour, season with $\frac{1}{8}$ teaspoonful of celery salt and salt and pepper; stir until smooth, then stir in gradually 1 cup of hot milk. When it has become smooth and thickened, add 2 cups of cold cooked chicken cut in small pieces and $\frac{1}{2}$ can of mushrooms cut in halves. Stir carefully until hot and serve on toast or in patty shells.

8. **Creamed Oysters.**—Add 2 tablespoonfuls of flour to 2 tablespoonfuls of melted butter, mix without browning, add $\frac{1}{2}$ cup of cream and the liquor from a quart of oysters. Stir until it boils; add $\frac{1}{2}$ teaspoonful of salt and a dash of white pepper, with a quart of drained oysters; cook well and serve very hot on toast or large crackers.

9. **Corn Oysters.**—Mix in a dish 1 well beaten egg and one cup of chopped corn, also $\frac{1}{4}$ cup of flour; season highly with pepper and salt; drop the mixture with a spoon to the size of a large oyster on the hot, well-buttered blazer.

10. **Clams a la Newburg.**—Melt 2 tablespoonfuls of butter, stir until creamy, then add 1 gill of sherry. Beat together the yolks of 2 eggs, and $\frac{1}{2}$ pint of cream, add and stir constantly; when well mixed stir in one pint of clams well trimmed and cook.

11. **Cheese Fondue.**—Put a tablespoonful of butter in a dish; when melted add 1 cup of milk, 2 cups of grated cheese, 1 cup of fine bread crumbs, saltspoonful of mustard and a pinch of cayenne. Stir constantly and add just before serving 2 well beaten eggs.

12. **Chocolate Souffle.**—Melt 2 ounces of chocolate; add 4 tablespoonfuls of hot water and $\frac{1}{2}$ cup of granulated sugar; cook until smooth; then add $\frac{1}{2}$ cup of cream and $\frac{1}{4}$ cup of milk, stirring constantly. Pour in the yolks of 2 eggs mixed with 1 tablespoonful of cream and, when slightly thickened, fold in the whites beaten stiff; cook 10 minutes and serve with whipped cream.

13. **Fricassee of Dried Beef.**—Melt 1 tablespoonful of butter, with $\frac{1}{2}$ pint of milk, or cream sauce; add 1 cup of beef chopped fine (that has been soaked in boiling water for 15 minutes) and 2 beaten eggs and stir until the sauce is thick. Serve on toast.

14. **Creamed Chicken.**—One cup milk, 2 tablespoonfuls butter, 2 tablespoonfuls flour, salt and pepper, 2 cups chicken meat cut fine. Make sauce as in shrimp wiggle and add chicken, stirring until hot; serve on toast or crackers. Lobster, dried beef, sweetbreads or crab meat may be used instead of chicken.

15. **Deviled Crabs.**—Two tablespoonfuls butter, 2 tablespoonfuls flour, 2 tablespoonfuls sherry wine, 1 cup chopped crab meat, $\frac{3}{4}$ cup milk, $\frac{1}{2}$ cup chopped mushrooms, yolk of 1 egg, salt and cayenne pepper. Make sauce with butter, flour and milk; stir in yolk of egg beaten slightly, then wine; now add crab meat, mushrooms, salt and pepper. Serve hot with cheese sandwiches or wafers.

16. **Dreams.**—Take 2 pieces of bread of medium thickness and put between them a thin piece of mild American cheese and toast to a good brown in hot butter.

17. **Fricasseed Eggs.**—To some veal gravy add a little flour and cream, butter the size of a walnut, nutmeg, pepper, salt, chopped parsley and a few pickled mushrooms. Let the mixture boil up well, then pour it over sliced hard-boiled eggs; arrange on a platter with small bits of toast.

18. **Fruit Canopes.**—Beat 2 eggs with $\frac{3}{4}$ cup of milk, $1\frac{1}{2}$ tablespoonfuls of sugar and $\frac{1}{2}$ teaspoonful of salt. Dip into this small pieces of bread and sauté them in the hot, buttered blazer over direct heat. On these pieces of toast spread a spoonful of fig paste, orange marmalade or pineapple and canned peaches; garnish with whipped cream.

19. **Halibut a la Hollandaise.**—Take cooked and flaked halibut and cook in Hollandaise sauce, made as follows:—Take $\frac{1}{2}$ cup of butter and wash to remove the salt, then divide into 3 pieces; put 1 piece into the blazer and add the yolks of 2 eggs and a tablespoonful of lemon juice. Stir constantly until the butter is melted, then add the second piece of butter and, as it thickens, add the third piece, also $\frac{1}{3}$ cup of boiling water. Season with $\frac{1}{4}$ teaspoonful of salt and a dash of cayenne.

20. **Shrimp Wiggle.**—One cup milk, 2 tablespoonfuls butter, 2 tablespoonfuls flour, salt and pepper, 1 can of shrimp, 1 can of peas; put butter in chafing dish; when melted add flour, salt and pepper, stirring until smooth; add milk slowly. When the sauce is hot add peas and shrimp (having drained both on taking them from the cans) and cook until heated through. Serve with salted crackers or wafers.

21. **Sardines on Toast.**—Drain sardines; heat them through, turning frequently; serve on toast or crackers.

22. **Welsh Rarebit.**—One pound chopped cream cheese, $\frac{1}{3}$ glass of beer or ale, yolk of 1 egg, 1 teaspoonful butter, $\frac{1}{2}$ teaspoonful dry mustard, a dash of red pepper and a little salt. Melt the butter; then add the cheese, stirring all the time. When the cheese begins to melt, gradually pour in the beer. When they are well blended add the yolk of the egg, salt, red pepper and mustard. Stir in well, then pour on toast or crackers.

23. **Cheese Balls.**—Grate $\frac{1}{2}$ pound of cheese, add the yolk of 1 egg, a very little red pepper, $\frac{1}{2}$ cup of chopped English walnuts, and enough sweet cream to roll into balls, size of an English walnut; roll balls in finely chopped parsley. Serve with wafers and coffee the last course.

24. **Cheese Ramekins.**—Mix chopped or grated cheese with bread crumbs, $\frac{1}{2}$ cup of cheese to 1 cup of crumbs; cover with milk and bake for 15 or 20 minutes. This should be baked and served in individual ramekin dishes. One-half cup of chopped hard-boiled eggs can be added if desired.

25. **Cheese Straws.**—Yolks of 3 eggs, 1 pound of grated cheese, 1 teaspoonful of sugar, 1 teaspoonful of salt, 1 teaspoonful of ground mace, and a pinch of red pepper. Mix all together with enough flour to make dough, as for

pie crust. Roll very thin and cut into strips as narrow or as long as desired. Lay separately in greased pan. Bake in a quick oven to a light brown.

26. **Cheese Sauce for Potatoes.**—One tablespoonful of flour, 1 tablespoonful of butter, $\frac{1}{2}$ pint of milk, $\frac{1}{4}$ pound cheese, grated; melt the butter in a pan; add flour and stir until smooth; stir the milk in gradually and add the cheese. Season with pepper and salt, and serve with mashed potatoes.

27. **Mexican Macaroni.**—Into a tablespoonful of hot browned butter stir 1 cup of cooked macaroni, 1 large tomato, 1 small onion, salt and paprika. When well browned add 1 cup of soup stock; pour into a buttered pan and cover the top with bread or cracker crumbs; bake half an hour.

28. **Spaghetti.**—Break into small pieces 2 cups of spaghetti and boil in salted water until perfectly tender. Butter a baking dish, cover the bottom with a layer of spaghetti, then a layer of tomatoes, then a layer of cheese; season each layer with paprika, salt and pepper. When the dish is full, finish off with the cheese and pour over this enough milk or cream to cover to the top of the pan. Bake slowly 2 hours, until it is rather dry and a rich brown.

THE ART OF CANDY MAKING.

These Secrets, Obtained from an Expert Confectioner, Enable the Housewife from a few Recipes to Make Endless Varieties of Candy, Including Chocolates, Bonbons, Fudges, Taffies, Caramels, Etc.

"Sweets for the Sweet."

At certain seasons and on special occasions, especially at Christmas time, every housewife desires to know something of the art of candy making and to make in her own kitchen and with ordinary cooking utensils, some of the sweets displayed so temptingly in the up-to-date confectionery stores. Candy making, to the layman, is a mysterious art suggestive of bright copper kettles, white marble slabs, massive cooking furnaces, a confusion of expensive machinery and white-aproned experts with years of experience and a knowledge of many recipes and secret processes, together with a wealth of capital.

And for the most part confectioners aim to keep all knowledge of their art to themselves and for this reason but few really good recipes find their way into the popular cook books, while no knowledge of the principles underlying the art are made public. The writer, having had years of experience and having now retired from business, makes known for the first time candy secrets obtained from confectioners whose whole lives have been devoted to the work and who are now operating some of the finest stores in the East. Candies made from several of these recipes have taken prizes in New York City in competition with the best artists of the world. Of course better results are obtained after one has had experience in the work and yet we will endeavor, even at the expense of repetition, to make the process so clear that the amateur, by carefully following the instructions given, may achieve results rivaling the products of the experienced confectioners

both in quality and appearance, and yet have the satisfaction of knowing it is "home-made."

The professional candy maker uses expensive machinery and endless paraphernalia, not because they are necessary to good results, but because he manufactures in large quantities and the saving of time and labor is essential.

PRECAUTIONS TO PREVENT SUGARING OR GRAINING IN MAKING ALL KINDS OF CANDY.—

In making all candies, except those that scorch easily, as soon as the sugar is dissolved and it begins to boil it is well to cover the vessel for a short time, say two or three minutes, that the steam may soften any sugar sticking to the sides of the kettle, then to take a damp cloth and carefully remove all undissolved sugar. This is important that the candy may not "grain" or turn back to sugar. If the candy is one that easily burns and requires stirring the kettle must be cleaned without steaming.

Either pure glucose or cream of tartar are generally used to prevent "sugaring." Vinegar will do but is not so sure. Be careful also that there is no sugar, not even a few grains, on the platter or marble upon which the candy is poured. Needless stirring or handling the batch while cooling will sometimes cause "graining." In spite of all precautions this will sometimes happen. It must then be covered with water, again placed on the stove and re-cooked but will seldom be as nice as when cooked but once.

COLORS.

If desired, the colors for candies may be made at home instead of being purchased at a confectionery.

For Red.—Take one-half pint of water, add one ounce of cochineal and boil for five minutes and add one-half ounce of powdered alum, one ounce of cream of tartar and boil for ten minutes. Take from stove and stir at once in two ounces of sugar and bottle for use.

For Blue.—Rub indigo in a little water in a saucer.

For Yellow.—Rub gamboge in water in same way.

For Green.—Boil spinach leaves in a little water for one minute, strain and bottle.

TESTING—HOW TO TELL WHEN THE CANDY IS DONE OR HOW LONG IT SHOULD BE COOKED.—

Candies are cooked for a short or long time, according as a low or high degree of heat, or temperature, is desired. Soft candies are cooked but a short time as only a low degree of temperature is needed. Hard candies are cooked longer or to a higher degree. For trying or testing the temperature, so as to know when the candy is done and should be removed from the stove, the confectioner generally uses a thermometer which he places in the boiling syrup, but as one fit for this purpose is rather expensive the housewife will find it more practical to try or test the candy by dropping a little of the boiling syrup into cold water. The confectioner uses his finger for this purpose by first wetting it in cold water, but it is safer for the beginner to use a spoon. The longer the candy cooks, or the higher the degree of temperature, the harder will it become when a little is thus chilled in cold water. One should try or test it frequently in this manner as it takes but a few moments over a hot fire to raise it from a low to a high degree. In

spite of care, should it be left on too long and be too hard when tested, add a little water to reduce it back and cook until it is of the right consistency when tested again.

Below we give a table that will enable you to test properly and tell when the candy is done. Then under each recipe we refer you to this table so that you may know just how long each candy should cook. Much of your success depends upon removing the candy from the stove at the right time. It will be seen from this table that if candy be boiled a short time and then a little be dropped into cold water it can just be felt with the finger or seen as syrup or molasses in the water. This is called the smooth (No. 1, below). If cooked a little longer and then dropped into water it will stick or cling to the finger but is still too soft to give shape or roll into a ball. This is the thread (No. 2, below). If cooked still longer and again tested it may be rolled between the fingers into a soft ball and is called the soft ball or feather (No. 3, below). And so it continues to get harder through the various degrees until if cooked long enough and again tested it becomes very hard when cooled in water and may be broken like glass in the fingers. This is the dry crack (No. 7, below). If a thermometer were put into the boiling candy it would be found at the various stages to register the degrees given with each testing. This table may be used in cooking icings and frostings as well as candies. Use cold water.

TESTING TABLE.

No. 1.—The Smooth (218 degrees). The boiling syrup or candy can just be detected when dropped into water and is about the consistency of molasses. (Used for crystallizing creams, candies, etc.)

No. 2.—The Thread (235 degrees). The candy will stick or cling to the finger but will not retain the shape of a ball when rolled between them. (Used for making liquors, etc.)

No. 3.—The Soft Ball or Feather (240 degrees).—The candy when cooled in water and rolled between the fingers will take the form of a soft ball. (Used for fondants, cream goods and fruit candies.)

No. 4.—The Hard Ball (245 to 250 degrees). When cooled in water and rolled between the fingers the candy will take the form of a rather hard ball but is not hard enough to crack when bent or broken. (Used for some fondants and cream goods, such as cocoanut and combination creams.)

No. 5.—The First Crack (250 degrees). Will just crack when bent or broken between the fingers. (Used for caramels, butter scotch, Japanese cocoanut bars, etc.)

No. 6.—The Second Crack (225 to 260 degrees). Will crack more easily than for first crack and will chew free without sticking to the teeth. (Used for most taffies or candies that are pulled.)

No. 7.—The Dry Crack (300 to 310 degrees). When cooled in water it will break brittle like glass in the fingers. If cooked much longer the candy will color and burn. (Used for stick candy and all kinds of hard clear candies.)

FONDANTS.—The basis of cream candies of nearly every description is a combination of sugar, cream of tartar and water cooked together and then stirred and creamed. By confectioners it is called "fondant." This fondant is variously colored, flavored and combined with chocolate, fruits, nuts, etc., to make chocolates, bonbons and wafers of nearly every descrip-

tion. The making of fondant is simple if accuracy is observed in following instructions and as it is the foundation of several hundred and in fact, as will be seen later, of several thousand varieties of cream candies, with this secret in her possession and a little experience, the housewife may compete with the confectioner in making endless varieties of toothsome sweets.

WHITE FONDANT is made by taking:

Four cups granulated sugar

Two cups hot water

One level teaspoonful cream of tartar.

Stir over a moderate fire until the sugar is dissolved. When it begins to boil, steam and wash the sides of the vessel to remove all sugar, as directed above. Then place over a quick fire and allow it to boil without stirring until it will form a soft ball when tested in cold water. (See No. 3 in Testing Table.) Remove from fire and set aside until cool but not entirely cold, then stir vigorously with a spoon or wooden paddle until it creams and becomes quite stiff. When too thick to stir, knead it thoroughly in the hands until light and creamy. Do not be afraid of kneading too much. Place in an earthen vessel or crock, keep covered with a damp cloth and in twenty-four hours it will be ready for use, but if the cloth is kept damp it will keep a number of weeks and perhaps several months and be all the better. This is white fondant and is the one mostly used.

MAPLE FONDANT is made by taking:

Four cups brown sugar

Two cups maple syrup

Two cups hot water

One level teaspoonful cream of tartar.

Cook and treat this the same as white fondant above.

When taken from the crock, should the top of the fondant be dry or hard it may be kneaded again until it is all of the same consistency.

To Color Fondant.—Work or knead in a little at a time any color desired, until of the proper shade.

To Flavor Fondant.—Work in the desired flavor in the same way to suit the taste.

We will now proceed to the various combinations or cream candies which may be made from fondant.

CREAM CANDIES.

Cream candies include chocolates, bonbons, wafers, etc., and of each there are many varieties.

1. **Chocolates.**—We will begin with those made from the white fondant described above. Color and flavor some of the fondant and roll it into small balls. A little starch may be used upon the hands to prevent sticking. Let these stand for an hour or two then dip into melted chocolate. Melt the chocolate by putting it into a dish and setting in a vessel of hot water. For dipping the drops use a fork or large needle and lay them upon paraffine or waxed paper to harden. If the waxed paper is not at hand use common white paper that has been well greased with butter.

2. **Sweet Sweets and Bitter Sweets.**—If the fondant is left uncolored and unflavored two varieties are obtained by dipping the drops into either sweet or bitter chocolate. If flavored with vanilla those dipped in sweet

chocolate are called "Sweet Sweets" and those dipped in bitter chocolate are called "Bitter Sweets."

3. **Various Chocolates.**—The white fondant above may be colored pink, red, blue, yellow, green or orange and rolled and dipped into either bitter or sweet chocolate so that we will have fourteen varieties. Each one of these fourteen, before being rolled and dipped, may be flavored with either vanilla, lemon, pineapple, orange, wintergreen, peppermint, raspberry, strawberry, etc., giving 112 varieties. As soon as dipped in chocolate a nut kernel or piece of candied fruit may be placed on top of each chocolate. By using English walnuts, black walnuts, pecans, hickory nuts, almonds, hazelnuts, pistachio nuts, filberts, cream nuts, candied cherries, or small pieces of citron or candied pineapple, etc., for this purpose, the number of varieties is multiplied by twelve, which makes over 1300 kinds. Instead of placing these nuts and fruits on top of the chocolate drop, the fondant may be rolled around any of them and then dipped in chocolate. By using the various colors and flavors of fondant in this way our 1300 is doubled to 2600 kinds.

Then the maple fondant may be used in the same number of ways, which again doubles the number of kinds so that we have over 5000 varieties of chocolate drops. In fact the combinations may be multiplied almost indefinitely to suit the taste or fancy of the confectioner and his patrons.

4. **Bonbons.**—These are made the same as chocolates except that the rolled fondant is dipped in melted fondant instead of chocolate. Take some of the white fondant in a vessel, set this vessel into a kettle of hot water until the fondant is dissolved. Dip the drops made from either the white or maple fondant into this melted fondant the same as into the chocolate for chocolate drops. Or the maple fondant may be melted and used for the coating in the same manner. Both the fondant used for the drops and that melted for the coating may be flavored and colored to suit. Nuts, fruits, etc., may be used the same as with chocolates above, so that even more combinations may be made in bonbons than in chocolates and our number of different kinds is again more than doubled, giving a total of more than 10,000 varieties of cream candies alone, should one desire to exercise his fancy to that extent.

5. **Wafers.**—To make wafers, melt some white fondant as directed above in making bonbons, color and flavor to suit and drop upon waxed paper, making the wafers about the size of a quarter or a little larger. In dropping the melted fondant, a large funnel may be brought into service, using a small, round stick about a foot long as a stopper. Hold the funnel right side up, place the stick in so as to close the small end, fill the funnel with the melted fondant, then open and close the small end of the funnel with the stick, allowing a little of the fondant to drop each time upon the waxed paper. A little practice will be required to make the wafers of uniform size.

6. **Cream Dates.**—Cut the date open lengthwise and take out the seed carefully. Refill with enough fondant so that the date cannot quite be closed again. Thus you allow a part of the fondant to show. Then roll in granulated sugar or dip each end in melted fondant colored to suit. (See fondant above.)

7. **Cream Grapes.**—Clip Malaga grapes from the stem with scissors to prevent leaking of the juice. Dip in melted fondant colored to suit and you have something luscious.

8. **Cocoanut Creams.**—When creaming white fondant (fondant for this purpose should be cooked a little longer than that described above, or to a hard ball as in No. 4 of the table for testing) stir in some good shredded cocoanut. After kneading, cut into small squares or bars to suit and dip in melted chocolate. Cocoanut creams are very fine eating.

9. **Combination Cream.**—Pour into a small cake pan some melted fondant of any desired color. (This fondant should be cooked to a hard ball as in No. 4 of testing table above.) When cool, pour on top of this more melted fondant of another color allowing each layer to cool before adding another. The layers may be of any number, thickness and color desired. When all is cold, carefully take from the pan and cut into slices as you would cake. This makes a very attractive and a very rich candy.

10. **Orangettes.**—Make the following fondant: Take 3 pounds granulated sugar, $\frac{1}{3}$ teaspoonful cream of tartar and water enough to dissolve. Cook to a hard ball (No. 4 in testing table above), pour upon an ungreased marble or large platter. Add the grated yellow rind of two oranges and the juice of one and stir with spoon or paddle until creamed; knead with the hands until soft and creamy, roll into drops and dip into melted chocolate. Orangettes made from this recipe were awarded the prize in New York City.

TAFFIES.

In making candies a confectioner generally has a marble stone or slab or a cooling table made for the purpose upon which to pour the batch of candy when cooked. If these are not available a large platter will answer for domestic purposes. In making taffies this should be well greased with butter to prevent sticking. In the pulling of taffies the confectioner uses a large iron hook, securely fastened to the wall; and for best results it will be found almost necessary in the making of home-made goods, for the candy can be pulled to much better advantage from a hook than in the hands and will be much more porous and light, which is much to be desired in taffies. A blacksmith will bend an iron to suit but if it is not convenient to have a hook made the candy may be pulled in the hands. Glucose is generally used in taffies instead of cream of tartar to prevent sugaring. Pure glucose is made from grain and is not injurious, as many people suppose.

VANILLA, ORANGE, LEMON, PINEAPPLE, STRAWBERRY, WINTERGREEN, CINNAMON AND CLOVE TAFFIES.—These taffies are made the same, except that they are differently flavored and colored so we will treat them together. Take five pounds granulated sugar, one and one-half pounds of glucose, or if the glucose cannot be obtained use one level teaspoonful of cream tartar in its place. Add enough water to dissolve the sugar. When it boils, cover and steam the vessel two or three minutes to soften any sugar on the sides and then remove all undissolved sugar with a damp cloth. Cook until, when tested in cold water, it will chew free and not stick to the teeth. This is the second crack as given in No. 6 of the table above for testing. Pour on greased marble or platter. If outer edges cool quickest turn them into center of platter that all may cool evenly, but be careful not to handle unnecessarily or it may go back to "sugar" and need to be recooked. As soon as it is cool enough to handle place on hook and pull. Any color or flavor may be added while on hook and thoroughly pulled in. Vanilla, orange, lemon, pineapple, strawberry, wintergreen, cinna-

mon and clove are most commonly used in taffies. These eight or ten varieties may be obtained from the one cooking if desired. When the taffy is pulled light and full of air and is cool enough to be rather stiff, remove from hook, cut into convenient lengths and place in pans.

VARIOUS CANDIES.

1. **Butterine Sticks.**—Take five pounds of granulated sugar, one and one-half pounds of glucose and one quart of sweet cream. Cook until it forms a soft ball when tested in cold water as described in No. 3 of the table for testing. This must be stirred constantly or the cream will burn. When done remove from fire and rub hard against the sides of the kettle with a knife or paddle until it creams, then before it sets pour on greased marble or plates, allowing it to make a layer about half an inch thick. Before it becomes entirely cold cut into sticks about four inches long and three-fourths of an inch in width. The writer is the originator of Butterines. They have had a great sale and will be found excellent.

2. **Cream Caramels—Vanilla and Chocolate.**—Take two quarts of heavy sweet cream, five pounds of granulated sugar and one-half pound of glucose. Stir constantly while cooking to the first crack that can be detected when tested in cold water. (No. 5 in testing table above.) Remove from fire and stir in one tablespoonful of vanilla; pour on greased marble or platter to a depth of half an inch. When cool cut into small squares.

To make chocolate caramels add from one-fourth to one-half pound of grated chocolate shortly before taking from the stove, allowing only time for the chocolate to dissolve. Cook and treat as above. You will have to use great care to prevent scorching. These caramels will stand without wrapping. This recipe was obtained from a confectioner at the cost of five dollars and it makes one of the finest cream caramels manufactured.

3. **Candy Cough Drops.**—Take two and one-half pounds of granulated sugar, one-fourth teaspoonful of cream tartar and enough water to dissolve. Cook to the dry crack or until it will break like glass when tested in cold water. (See No. 7 in testing table before given.) After testing place a little in the mouth and if it will not stick to the teeth when chewed it is ready to take from the stove and pour upon greased marble or platter. When on platter add one-half ounce powdered willow charcoal and one-fourth tablespoonful of oil of anise, fold and knead thoroughly while as hot as can be handled. Then cut into small pieces or drops with shears. The batch must be handled rapidly or it will cool and harden before cut into convenient pieces. These are some of the best cough drops made and will last a long time.

4. **Peanut Bar Candy.**—Take five pounds of granulated sugar, one-fourth pound of glucose and water to dissolve. Cook to a soft ball when tested in cold water, or to No. 3 in testing table previously given. Now add raw shelled peanuts to make the batch quite thick. Stir and cook until the peanuts are thoroughly done and smoke rolls from the kettle. Pour on greased marble or platter and when cool but not cold cut into bars with a large knife. The peanuts may be tested by dropping a few into cold water and biting in two with the teeth. They should be brown and well roasted. Do not forget to steam and wash the undissolved sugar from the sides of the vessel as elsewhere directed. Great care must be exercised for peanut candy very easily sugars and cannot be recooked like most candies.

5. **Cocoanut Bar Candy.**—Take five pounds of light brown sugar, one-

half teaspoonful of cream of tartar and enough water to dissolve. Cook to soft ball, or No. 3 in testing table previously given. Now add one and one-half pounds of shredded cocoanut, stir and cook to first crack, or No. 5. Pour on greased marble or platter making a layer half an inch thick. As soon as cool enough cut into bars.

PEOPLE'S RECIPES FOR HOME-MADE CANDIES.

1. **Butter Scotch.**—Take three-fourths cup of molasses, one cup of sugar, two tablespoonfuls of vinegar, two tablespoonfuls of boiling water and one-half cup of butter. Boil until brittle when tried in cold water, turn into well buttered tins and cut in squares.

2. **Cream Candy.**—Take one cup of sweet cream, two cups of granulated sugar and as much cream of tartar as you can hold on the point of a knife. Do not stir while cooking. Cook thirty minutes, take off and beat, add nuts and flavoring, work into a roll and slice.

3. **Peanut Brittle.**—Put one cup of sugar into a frying pan and shake briskly over the fire until the sugar is melted. Then add a cup of chopped peanuts. Take care not to burn the peanuts.

4. **Cracker Jack.**—Take two cups of sugar, one cup of molasses and two tablespoonfuls of vinegar. Boil until it cracks when tested in cold water. Then take from the fire, add one-half teaspoonful of soda, beat briskly and pour over pop-corn and chopped peanuts.

5. **Prauline.**—Take two pounds of brown sugar, one-half cup of butter, one cup of milk and one tablespoonful of vinegar; boil until it threads, flavor with vanilla, add two quarts of picked nuts and then beat until creamy and pour into pans.

6. **Molasses Taffy.**—Two cups of sugar, one cup of molasses, one teaspoonful of soda and one tablespoonful of vinegar; boil until brittle and pull.

7. **Sea Foam.**—Cook two cups of light brown sugar, with enough water to cover it, until it will form a soft ball when dropped into cold water; then add two well beaten whites of eggs and beat constantly until it thickens; drop with a spoon upon greased paper and put half of an English walnut on each piece and let stand until it hardens.

8. **Chewing Taffy.**—For two cups of sugar take one cup of water, when it is boiling add two tablespoonfuls of vinegar and a piece of butter the size of a walnut, let cook until it will harden in water, add the flavoring and remove from the stove. Pull when it is cool enough.

9. **Marshmallows.**—One box of Knox's No. 1 gelatine, sixteen tablespoonfuls of cold water, four cups of granulated sugar, twelve tablespoonfuls of hot water, one-half teaspoonful of vanilla and a pinch of cream of tartar; put gelatine and water into a large crock and let stand while the sugar is cooking until it threads well; then mix together and beat constantly for half an hour with a paddle. Line a pan with greased paper and sprinkle with powdered sugar, pour in marshmallow and let stand one hour and then cut and dip in powdered sugar.

10. **January Thaws.**—Three-fourths cup of milk or cream, two cups dark brown sugar, a lump of butter the size of an English walnut and one teaspoonful of vanilla. Put sugar and cream into kettle, stir until sugar is dissolved and boil until a soft ball can be formed of a little that has been dropped into cold water and then add butter and vanilla and one-half cup

of nuts (walnuts preferred). Beat with a spoon until candy cracks as you beat it. Turn into a buttered dish and cut into squares.

11. **Macaroons.**—One and one-half cups of cocoanut, whites of five eggs and one cup of pulverized sugar. Bake twenty minutes in a slow oven on unbuttered paper. When done turn onto buttered paper.

12. **Hickory Nut Kisses.**—Three cups of fine granulated sugar, whites of eight eggs and one cup of hickory nut meats. Flavor with vanilla. Beat eggs until very stiff and dry. Beat sugar in lightly, adding a little at a time. Bake on buttered tins in rather slow oven.

13. **Kisses.**—Five tablespoonfuls of powdered sugar, whites of three eggs and essence of lemon to flavor. Mix well and drop with a teaspoon on a buttered paper placed in a pan. Sift powdered sugar over them and bake one-half hour in a slow oven. Whip eggs a long time after they are stiff to dry them.

14. **Maple Sugar Candy.**—One cup of granulated sugar, one cup of maple sugar, one-half cup of sweet cream, one-half cup of water and a lump of butter the size of a hickory nut. Boil all together until the mixture will hold together when dropped into cold water. Take from the fire and stir until it begins to thicken and then pour into a buttered dish.

15. **Maple Fudge.**—One quart of maple syrup and one cup of sweet cream; cook until it will form a hard ball when dropped into cold water. When cold, stir until it hardens.

16. **Butter Scotch.**—Two cups of granulated sugar, one-fourth cup of vinegar and one tablespoonful of butter. Boil sugar and vinegar together until almost done and then add butter. Do not stir. Cook until crisp when cooled in water and pour into buttered pan to cool.

17. **Sugar Drops.**—Moisten two cups of brown sugar with a little water and boil until it will form a ball when dropped into cold water. Have ready the white of an egg, beaten stiff and flavored with vanilla. Pour hot syrup into egg and beat hard. Drop upon plates with a fork.

PIES.

No soil upon earth is so dear to our eyes,
As the soil we first stirred in terrestrial pies.

—O. W. Holmes.

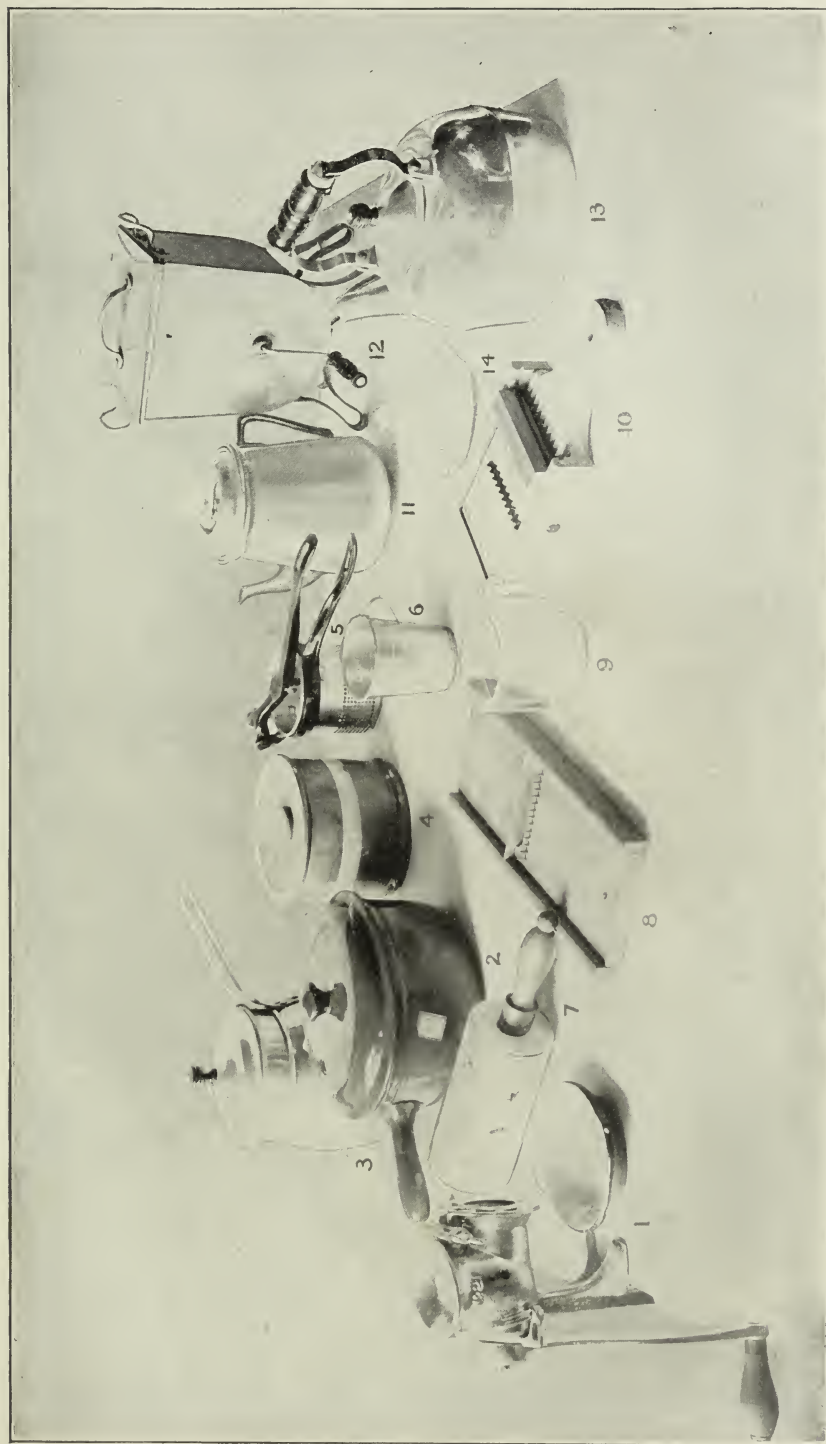
"We've baked the pies you all like best
And are willing now to stand the test;
The proof of the pudding is in the eating,
And the pies we serve there is no beating"

GENERAL DIRECTIONS FOR MAKING PIES.

In the baking of pies it takes much practice to become perfect. One may have the best recipes in the world and yet fail but the young housewife should not let this discourage her.

The secret of pie-making is to use just as little water as possible and get the dough into shape, having everything very cold. Butter or lard for pastry should be fresh, sweet and solid.

Use a cupful of lard and a teaspoonful of salt to a quart of flour. This



(Photographed especially for this book.)

NO. 7. A FEW OF THE LARGER NECESSARY KITCHEN UTENSILS.

1. Food chopper.
2. Double boiler.
3. Casserole for slow vegetables and meat cooking.
4. Butter crock.

5. Fruit press or vegetable ricer.
6. Measuring cup.
7. Rolling pin.
8. Corn splitter.
9. Glass measuring cup.
10. Vegetable cutter.

11. Coffee percolator.
12. Whip churn for whipping cream, beating eggs or making butter. (Comes in three sizes.)
13. Teakettle.
14. Lemon squeezer.

quantity will make four crusts, either two pies with covers or four without. The lard should be worked thoroughly into the flour with the fingers before any water is added. Use only a little water and press the dough together hard, then put upon a board that has been well floured. Roll the dough one way only. In warm weather if you are not ready to bake the paste at once after making up, it should be kept on ice till wanted. It improves pastry to lie on ice two or three hours and it may be kept several days if necessary.

The under crust should be a little thicker than the top. If a pie is made without an upper crust it is well to have a heavy edge. If tin pie pans are used the bottom crust will be better baked than if earthen pans are used. Before putting on the upper crust, wet the rim of the lower with water, or a thick paste of flour and water, or flour and egg; then press the two crusts well together and then loosen all from the pans. This will prevent the bursting of the pie.

If it is a fruit pie a little flour should be dusted over the bottom; or, the juice will be prevented from soaking through by rubbing some well-beaten egg over the lower crust with a piece of cloth. To prevent the juice from running over, a level teaspoonful of cornstarch should be evenly sprinkled over the fruit before the upper crust is put on.

Always make air holes in the top crust or the pie will burst. It is best not to wash the rolling pin but to scrape the dough off well and rub with a dry towel. Thus it will always be dry and will never stick if kept well floured.

Always beat eggs separately.

Some always grease the pie tins while others sprinkle them with flour. It is safest to grease them if the pie is to be removed from the pan before putting on the table.

To keep pastry from scorching on the bottom sprinkle salt in the oven under the pie tin.

A nice, flakey, pie dough may be made by lessening the amount of shortening and adding a level teaspoonful of baking powder to a quart of flour.

The time for cooking pies varies with the heat of the oven and the kind of pie. Where a rich lemon pie might bake in twenty minutes it probably would require from thirty to forty minutes to bake a green apple pie.

Bake fruit pies in a moderate oven and if possible have a better heat at the bottom than at the top or the lower crust will be "raw." When done, the crust will separate from the pan and may be easily removed. It should be taken from the tin at once and slipped onto a porcelain plate if you would have the bottom crisp instead of soggy; or, stand on a wire cake sieve to allow the air to circulate all around it.

RECIPES FOR PIES.

1. **Delicious Apple Pie.**—Pare and core 6 or 8 tart apples; boil 1 cup of sugar in $\frac{1}{2}$ cup of water for 5 minutes; add a heaping teaspoonful of butter and 1 of almond extract; stir and lay in the apples; cover; bake until tender and set aside to cool. Line a deep pie tin with puff paste; prick with a fork to keep from blistering and bake; fill with the fruit; spread over the top a meringue made of the whites of 2 eggs and 2 tablespoonfuls of shredded blanched almonds; dust with a tablespoonful of sugar; brown slightly in a cool oven and serve very cold.

2. **Buttermilk Pie.**—Make and bake your crust. Filling: two cups of

buttermilk, yolks of 3 eggs, 1 cup sugar, a little salt, 1 tablespoonful of butter, 3 tablespoonfuls of flour, 1 teaspoonful of lemon essence. Cook and cool as for lemon pie.

3. **Custard Pie.**—One level teaspoonful of flour sifted in 1 cup of sugar; add 2 eggs; beat together and add milk to fill pie tins brim full; grate a little nutmeg on top and add a few tiny lumps of butter; bake slowly until by testing the center of the pie with a knife it is found to have thickened.

4. **Cornstarch Pie.**—Take 1 quart of milk and heat to boiling; add $\frac{1}{2}$ cup of sugar, the well-beaten yolks of 2 eggs, and 2 tablespoonfuls of cornstarch dissolved in cold milk; let boil a few minutes; remove from fire; have crust baked; then pour in custard. Beat whites of eggs; add a little sugar; spread on tops of pies and return to oven to brown. This is enough for 2 pies.

5. **Chocolate Pie.**—One and one-half cups of bread crumbs, 3 eggs (save the whites for the tops), $\frac{1}{2}$ cup of granulated sugar, 3 strips of chocolate, 3 pints of milk; put the crumbs in the milk; when hot put in the beaten eggs and chocolate and sugar (thinned with a little milk), and let boil until thick; bake crusts and fill. Enough for 2 large pies.

6. **Chocolate Cream Pie.**—Bake a shell of pie crust; have ready a filling made as follows: One-half cup of sugar, the yolks of 2 eggs, 1 square of Baker's chocolate, 2 tablespoonfuls of flour, 1 scant pint of milk, butter the size of a walnut; cook them all together and fill crust; beat whites of eggs and, after spreading on top of pie, sprinkle on sugar and set in oven to brown slightly.

7. **Mock Cherry Pie.**—One-half cup chopped raisins, 1 teacup cranberries, 1 teacup sugar, $\frac{1}{2}$ cup boiling water, 1 tablespoonful of flour; cook for 10 minutes; flavor with vanilla; put flour in after it is cooked.

8. **Cocoanut Pie.**—Whip 2 eggs into $\frac{1}{3}$ cup of sugar and mix with 1 tablespoonful of butter, 1 cup grated cocoanut, and pour over it 1 pint of milk brought to the boiling point; line a pie plate with pastry crust, leaving high rim; bake in moderate oven.

9. **Cream Pie.**—One cup of water, 2 eggs, 1 tablespoonful of cornstarch, $\frac{1}{2}$ cup sugar, 1 heaping teaspoonful of butter, a pinch of salt, flavor with vanilla; when the water is boiling stir in the cornstarch, the beaten yolks of eggs, with sugar; stir in the butter and let cool; add flavor. Bake crust before filling; beat the whites of eggs with 2 tablespoonfuls sugar for top and put in oven and brown.

10. **Elderberry Pie.**—Five tablespoonfuls elderberries, 3 tablespoonfuls sugar, 5 tablespoonfuls molasses, 2 tablespoonfuls cider vinegar, 1 tablespoonful flour sprinkled on top. Bake in 2 crusts.

11. **Lemon Pie.**—The juice and grated rind of 1 lemon, 1 tablespoonful of butter, 1 cup of sugar beaten to a cream, 2 tablespoonfuls sweet milk, 4 eggs; mix all together and pour into a crust-lined plate and bake; when done, beat the whites of 2 eggs with 2 tablespoonfuls of powdered sugar; spread it over pie and brown in oven.

12. **Molasses Pie.**—One and one-half cups of maple syrup, 1 cup of sugar, yolks of 4 eggs, butter the size of an egg, 1 nutmeg; bake in 1 crust; remove from oven and cover with the whites of the eggs, beaten with 4 tablespoonfuls of sugar; place in oven and brown. This will make 2 pies.

13. **Mince Meat.**—Cook 5 or 6 pounds of beef until tender (let boil until nearly dry), chop very fine; at the same time mince 3 pounds beef suet,

4 pounds currants, 4 pounds raisins, 1 pound citron. Chop fine 4 quarts good, tart, cooking apples; put all in a large pan together; add 2 ounces of cinnamon, 1 ounce ginger, 1 ounce cloves, 4 nutmegs, the grated rind and juice of 2 lemons, 1 tablespoonful salt, 1 teaspoonful pepper, and 2 pounds sugar; put in a kettle 1 quart boiled cider or 1 quart grape juice, 1 quart of molasses, a lump of butter; let it come to boiling point and pour over contents in pan; mix thoroughly and pack in jars.

14. **Mock Mince Pie.**—Two-thirds cup of vinegar, 1 cup of molasses, $\frac{2}{3}$ cup of water, 1 cup of sugar, 1 cup of bread crumbs, 1 cup of chopped raisins, 1 teaspoonful of cloves, 1 teaspoonful of cinnamon, butter size of an egg, nutmeg; cook a few minutes, stirring well. This is enough for 3 pies.

15. **Pumpkin Pie.**—One cup of sifted pumpkin, 1 tablespoonful flour, a pinch of salt, 1 teaspoonful ginger, 1 teaspoonful cinnamon, $\frac{2}{3}$ cup of sugar, 1 beaten egg; mix well together and pour over 2 cups rich milk; fill deep pie tin and set in oven at once. It is done when it rises well in the middle. The pumpkin should be washed and cut in cubes and cooked without paring; when tender sift and return to back part of stove and cook until dry and sweet. This makes one pie.

16. **Rhubarb Pie.**—Pour boiling water over 2 teacups of chopped rhubarb; let it stand 5 minutes and then drain; mix with the rhubarb 1 teacup of sugar, the yolk of one egg, a piece of butter and a tablespoonful of flour, moistening the whole with 3 tablespoonfuls of water; bake with 1 crust; make meringue of the white of the egg with 3 tablespoonfuls of sugar; spread over the top of the pie and brown.

17. **Squash Pie.**—One large cup of steamed and strained squash, $\frac{1}{2}$ cup of sugar, $\frac{1}{2}$ teaspoonful of cinnamon, $\frac{1}{4}$ teaspoonful of salt, $\frac{1}{4}$ teaspoonful of lemon extract, $\frac{1}{4}$ teaspoonful ginger, 1 cup of milk, 2 eggs; bake in one crust.

18. **Transparent Pie.**—One cup of butter, 1 cup of brown sugar, yolks of 3 eggs, all well beaten together; bake with 1 crust.

19. **Vinegar Pie.**—One cup of water, 1 cup of sugar, piece of butter size of an egg, $\frac{1}{2}$ cup of flour, 3 tablespoonfuls of vinegar, pinch of salt, a little nutmeg; stir all together and boil; when it becomes thick, pour it into a crust which should be previously baked.

20. **Pie Crust.**—One cup lard, 3 cups flour, a little salt; mix with ice cold water, into a soft dough; handle as little as possible.

21. **Lemon Cream Pie.**—One cup sugar, 1 raw potato grated, 1 cup of water, the grated rind and juice of 1 lemon; bake in pastry top and bottom; this will make 1 pie.

22. **Shoo-Fly.**—Make regular pie crust and fill as follows: 2 cups boiling water, 1 cup syrup and 2 teaspoonfuls baking soda and crumbs; pour the boiling water over the syrup and add the soda. Directions for making the crumbs: One cup of lard, 3 cups of flour, $1\frac{1}{2}$ cups of sugar; same to be used in place of the top crust.

23. **Pie Dough.**—Four cups of flour, a little salt, enough lard to make flour stick together when pressed. Work for about 20 minutes. Then add just enough water to make it hold together.

24. **Pie Plant Pie.**—Cut up enough pie plant to fill 6 cups and chop fine; add 3 cups of sugar, 3 heaping tablespoonfuls of flour, 3 eggs. Bake with 2 crusts. This is enough for 4 pies.

25. **Raisin Pie.**—One cup finely chopped raisins, 1 cup water, 1 cup

brown sugar, 1 tablespoonful flour. Boil together until it thickens. Bake between 2 good light crusts.

SALADS AND SALAD DRESSINGS.

To make a perfect salad, there should be a spendthrift for oil, a miser for vinegar, a wise man for salt, and a madcap to stir the ingredients up and mix well together.
—*Spanish Proverb.*

1. **Banana Salad.**—Slice bananas; arrange on lettuce leaves; add a few nuts and the dressing. Oranges sliced very thin, in the proportion of 1 orange to 3 or 4 bananas, may be added if preferred. Salad dressing: One teaspoonful salt, 1 teaspoonful Colman's mustard, 1 tablespoonful butter, 2 teaspoonfuls sugar, 3 tablespoonfuls cream, 1 teaspoonful cornstarch, yolks of 4 eggs, 1 scant teacup vinegar. Mix and stir in double boiler over fire until it begins to thicken; strain. When used, thin with $\frac{1}{2}$ cup cream, whipped. If cream is omitted this may be kept in a cool place for some time.

2. **String Bean Salad.**—One cup cold boiled string beans, cut in small pieces; 3 hard boiled eggs cut in rings; 3 beets boiled and sliced; 1 head of lettuce, chopped. Put lettuce leaves on plate; then salad; cover with mayonnaise dressing.

3. **Cherry Salad.**—Take some white California cherries and remove the pits, replace with a blanched filbert or hazelnut. Serve on a lettuce leaf with a spoonful of salad dressing, to which a plentiful supply of whipped cream has been added.

4. **Cheese Salad.**—For this salad use three hard-boiled eggs, $1\frac{1}{2}$ cups of cheese, grated fine; 1 teaspoonful of mustard, $\frac{1}{10}$ of a teaspoonful of cayenne, $\frac{1}{2}$ teaspoonful of salt, 2 tablespoonfuls of salad oil or melted butter, 2 tablespoonfuls vinegar and a cup of cold chicken chopped rather coarse. Rub yolks of eggs until a smooth paste is formed; gradually add the oil, stirring all the while with a silver fork; then add all the seasoning. Mix the cheese and chicken lightly with this dressing and heap the mixture on a pretty dish; garnish with the whites of the eggs cut in circles, and a few white celery leaves or sprig of parsley. Serve with water crackers, cold or toasted.

5. **Corn Salad.**—Four red peppers, 12 good ears of corn, 2 quarts of vinegar, 2 tablespoonfuls of salt, $\frac{1}{4}$ pound of ground mustard, 1 cup sugar. Chop 1 head of cabbage and let it drain; chop peppers and cut off corn and mix. Boil all together for 20 minutes.

6. **Fruit Salad.**—One dozen oranges, 1 dozen bananas, $\frac{1}{2}$ dozen good apples, 1 pound Sultana raisins, 1 bunch celery, 1 pound pecans and English walnuts mixed, a few chopped pickles. Pour over fresh mayonnaise dressing.

7. **Mixed Summer Salad.**—Two teaspoonfuls of ground mustard leaves, 3 heads of lettuce, a handful of watercress, 5 tender radishes, 1 cucumber, 3 hard-boiled eggs, 2 teaspoonfuls white sugar, 1 teaspoonful each of salt, pepper and mustard; 1 teacupful vinegar, $\frac{1}{2}$ teacupful oil. Mix all together and serve with a lump of ice in the middle.

8. **Sweetbread Salad.**—Two pairs of sweetbreads, dropped in boiling salt water and cooked from 20 to 30 minutes, then plunged in very cold water for a few minutes. Take equal quantity of celery and 1 tablespoonful of chopped almonds. In cucumber season, use them in place of the celery; it is fine.

9. **Sardine Salad.**—Lay a sardine on a lettuce leaf, and squeeze 3 drops of lemon juice on each fish. Pour over it a spoonful of thick dressing. Garnish with cold beets cut in star shape.

10. **Cream Dressing.**—Mix together thoroughly, $\frac{1}{2}$ tablespoonful mustard and salt, 2 tablespoonfuls sugar, 1 tablespoonful flour, 2 eggs, $2\frac{1}{2}$ tablespoonfuls melted butter, $\frac{3}{4}$ cup of cream. Then add slowly $\frac{1}{4}$ cup vinegar. Cook in double boiler until it thickens.

11. **Cabbage Salad Dressing.**—Six tablespoonfuls cream, 2 raw eggs well beaten, $\frac{1}{2}$ teaspoonful salt, 6 teaspoonfuls vinegar, a small piece of butter; put on fire and cook, stirring until quite thick; have a half head of cabbage chopped fine; sprinkle with salt; add the dressing when cold; 2 tablespoonfuls cream. Pour this mixture over cabbage.

12. **Dressing for Yellow Pickles.**—One gallon vinegar, $\frac{1}{2}$ pound brown sugar, 1 ounce celery seed, 1 ounce tumeric, 1 cup flour. Put all the vinegar except 1 quart on the stove; add sugar and celery seed; mix mustard tumeric and flour with the quart of vinegar; let boil until it thickens; pour over the pickles while hot and seal. Scald the pickles in weak vinegar and drain. Use anything that makes good pickles—small onions, cucumbers, cauliflower, sweet peppers or tomatoes, cut in small pieces. This is very nice for chopped pickles.

13. **Salad Dressing.**—Five whole eggs or yolks of 12; beat well. One and one-half cups of vinegar, 1 cup melted butter, $\frac{1}{2}$ cup sugar, 2 tablespoonfuls mustard. Pour in sauce pan and stir until it boils; take off fire and add 2 teaspoonfuls celery seed and 2 teaspoonfuls salt. This makes a large quantity and should be thinned with cream when used.

14. **Stuffed Tomato Salad.**—Peel 6 smooth tomatoes, remove thin slice from the top of each and take out seeds and pulp. Sprinkle inside with salt, invert and let stand for awhile in a cool place. Drain seeds and pulp, mix with $\frac{1}{4}$ of a cucumber and several stalks of celery chopped. Fill tomatoes and put a spoonful of mayonnaise dressing on each one and place on a lettuce leaf.

15. **Slaw.**—To a cabbage head put to boil $\frac{1}{2}$ cup of milk, $\frac{1}{2}$ cup of vinegar and water mixed, and beat up 2 eggs. Boil milk, vinegar and water together; add a small lump of butter and put the eggs in with the contents. Add a little flour to thicken and also sugar to suit the taste. Salt the cabbage and add the other when cool. This should be boiled.

16. **Cold Slaw.**—One small, solid head of cabbage chopped fine. Take 1 egg, $\frac{1}{4}$ cup of vinegar, $\frac{1}{2}$ teaspoonful salt, $\frac{1}{2}$ teaspoonful mustard. Mix egg, salt and mustard with vinegar. Cook and pour over cabbage.

17. **Beet Salad.**—One can beets, 1 small bunch of celery, 1 pound English walnuts. Season with pepper and salt. Mix with mayonnaise dressing.

18. **Apple Salad.**—Six apples, 1 bunch of celery. Chop all together, then add 1 cup English walnuts chopped fine; pour mayonnaise dressing over and serve.

19. **Endive Salad.**—Clean and wash the endive, cut up in pieces $\frac{1}{2}$ -inch long; to 2 cups of endive have about 4 cups of cold boiled potatoes cut in small pieces; take 2 slices of bacon cut in small pieces, fry brown and crisp; to this add a scant cup of vinegar diluted with water; pour this while warm over the salad; mix well; pepper and salt to taste, and a little sugar if preferred.

20. **Green Bean Salad.**—Two quarts of green beans, break into small pieces and cook two hours in boiling salt water; drain and cool; add 1 large cucumber and 1 onion chopped fine; cover with salad dressing.

21. **Heavenly Hash (or Fruit Salad).**—Slice three oranges, 3 bananas; flake half of pineapple, place in layers, sprinkle sugar over each layer, squeeze the juice of one lemon over all, put on ice 3 hours. Grated cocoanut may be added if desired.

22. **Tomato Jelly.**—Soak $\frac{3}{4}$ box of gelatine in $\frac{1}{2}$ cup of cold water; cook a can of tomatoes, a stalk of celery, half an onion, a bay leaf, 2 cloves, a teaspoonful of salt and a dash of red pepper ten minutes. Add 2 tablespoonfuls of vinegar and gelatine. Stir until dissolved; strain and turn into 1 large mold or several small ones; when jellied cut in squares, lay each on crisp lettuce leaf, put on a spoonful of salad dressing and serve.

23. **Nut Salad.**—Four hard-boiled eggs, 1 pound English walnuts, 1 bunch of celery chopped very fine; mix with any desired salad dressing.

24. **Meat Salad.**—Two pounds of meat, 1 pound of pork; boil them together, chop fine; 1 onion, 1 bunch of celery, 2 eggs, lump of butter, 1 cup of vinegar; put on to boil until it gets thick; when cold mix with meat.

25. **Chicken Salad.**—One large chicken boiled whole; when thoroughly cold cut into dice; cut into dice also the white part of heads of celery; mix chicken and celery together, then stir well into them a mixture in the proportion of 3 tablespoonfuls of vinegar to 1 of oil, with salt and pepper to taste; set in a cold place for an hour or so; just before serving mix with a mayonnaise sauce.

26. **Cold Slaw Dressing.**—Two eggs well beaten, $\frac{1}{2}$ teaspoonful melted butter, $\frac{1}{2}$ teaspoonful salt; beat well together and add 6 tablespoonfuls of vinegar and 3 tablespoonfuls of cream; put in a pan of boiling water and cook until thick.

27. **Mustard Dressing.**—One tablespoonful of Coleman's mustard, 1 egg, 1 tablespoonful of cornstarch, 1 tablespoonful sugar, 1 tablespoonful salt, a little pepper, 1 teaspoonful celery seed, 1 pint vinegar; mix all together, cook in double boiler until thick. Will keep a long time if the air is excluded.

28. **Cheese Salad Dressing.**—Two tablespoonfuls of soft, grated cheese pounded until smooth; season with a little cayenne and a teaspoonful of salt; add 1 tablespoonful vinegar and rub till smooth; then add enough oil to moisten.

29. **Mayonnaise.**—Mix 1 teaspoonful of salt with 1 teaspoonful of made mustard, $\frac{1}{4}$ teaspoonful pepper and $\frac{1}{2}$ teaspoonful celery seed; add to 1 cup vinegar, $\frac{1}{2}$ cup sugar, 3 beaten eggs; stir constantly until it boils.

30. **German Potato Salad.**—Boil 6 large potatoes, peel and slice while hot, and pour over the following: Cut $1\frac{1}{2}$ pounds of lean bacon in small dice and fry brown. Season potatoes with salt, pepper and finely sliced onion;

mix thoroughly with the bacon fat and dice, and then add $\frac{1}{2}$ cup vinegar; garnish with sliced hard-boiled eggs.

31. **Macaroni and Tomatoes.**—One cup grated cheese, 1 quart tomatoes, 1 cup macaroni cooked in salt water until done; then add tomatoes and cheese with salt, pepper, sugar and butter.

32. **Waldo Salad.**—One pint each of celery and apples cut in dice, $\frac{1}{2}$ pint of English walnuts, $\frac{1}{2}$ pound of white grapes, mix together and when ready to serve cover with mayonnaise dressing.

33. **Salmon Dressing.**—One can of salmon, drained; juice of 2 lemons (or vinegar), 1 teaspoonful of mustard, yolks of 2 hard-boiled eggs; mix yolks of eggs with the mustard, add to salmon and then add lemon juice or vinegar.

34. **Baked Corn.**—Three eggs, $\frac{1}{2}$ pint of milk, 1 tablespoonful melted butter, 1 tablespoonful sugar, 1 can corn; beat whites and yolks of eggs separately; put corn and yolks together; stir hard and add the butter, then the milk gradually, beating all the while; next the sugar and a little salt; lastly, whites of eggs. Bake slowly at first, covering the dish; remove and brown nicely.

35. **Sour Potatoes.**—Slice potatoes as for frying; cook in as little water as possible; when soft season with pepper and salt. Beat 1 egg, add about $\frac{1}{2}$ cup of vinegar, stir into potatoes, let boil a few minutes; more vinegar may be added if desired.

36. **Potato Salad.**—Boil 6 good sized potatoes and cut into pieces the size of a chestnut; add 2 tablespoonfuls of melted butter, a small onion chopped fine and season with $\frac{1}{2}$ teaspoonful each of celery seed, salt and mustard, then add the following dressing: Two eggs, 2 tablespoonfuls sugar, $\frac{1}{2}$ teacup vinegar, $\frac{1}{2}$ teacup water; boil till thick.

37. **Waldorf Salad with Mayonnaise Dressing.**—Cut in small pieces 4 fair-sized apples and about 3 stalks of celery and pour over them the juice of 1 lemon; then add the mayonnaise, mixing it in well. If you wish, add some English walnuts chopped into small pieces.

Mayonnaise.—Three-fourths tablespoonful vinegar, yolk of one egg, $\frac{1}{2}$ teaspoonful salt, $\frac{1}{4}$ teaspoonful mustard, $\frac{1}{4}$ teaspoonful sugar, about $\frac{3}{4}$ of a small bottle of olive oil; stir everything together but the olive oil and then drop that in slowly, stirring all the time.

38. **Mayonnaise Dressing.**—Beat together the yolks of 2 eggs and all the sugar they will take; add $\frac{1}{4}$ teaspoonful each of pepper, salt, celery seed and ground mustard; add good $\frac{1}{2}$ cup of vinegar and cook, stirring constantly; add a lump of butter about half the size of an egg. The longer you stir it the better it will be.

39. **Salad Dressing.**—One beaten egg, 3 tablespoonfuls sugar, $\frac{1}{2}$ teaspoonful salt, 1 cup vinegar, $\frac{1}{2}$ teaspoonful mustard, pepper to taste. Boil this and stir into creamed milk and butter. Pour over potatoes cold.

40. **Cream Dressing.**—One teaspoonful mustard, 1 teaspoonful salt, 2 tablespoonfuls flour, $1\frac{1}{2}$ teaspoonfuls powdered sugar, a little pepper, 1 teaspoonful melted butter, yolk of 1 egg, $\frac{1}{3}$ cup hot vinegar, $\frac{1}{2}$ cup heavy cream; mix the dry ingredients, add butter and yolk, slightly beaten; add vinegar slowly. Cook over hot water, stirring until thickened. Add this to the cream beaten until stiff.

PUDDINGS AND SAUCES.

"The proof of the pudding is in the eating."

PUDDINGS.

Each ingredient used in making a pudding should be of the best quality. The milk should be strictly fresh and the suet perfectly sweet. Dried currants should be washed carefully and dried in a napkin. The stems and dirt should be removed by rubbing in a coarse towel after which the currants should be seeded. Spices must be finely pounded and only the outside rind of oranges and lemons should be lightly grated off.

For puddings, eggs should always be beaten separately, the yolks strained and the whites added last. Boiled milk should be allowed to cool before the eggs are added and if fruit is used it should be added last. Puddings are either boiled, baked or steamed. Add a pinch of salt to all puddings and bake them as soon as mixed. Batter and cornstarch puddings require a rather quick oven while bread, rice, custard and fruit puddings should have a moderate heat.

Boiled puddings will be lighter if boiled in a cloth with full room to swell but some use a mold or bowl with a cloth tied over it. The bag should be wrung out of hot water and well floured on the inside. As a rule boiled puddings require twice as long for cooking as those that are baked. Steamed puddings are likely to be lighter and more wholesome than those that are boiled or baked. Put over cold water and do not remove cover while steaming.

1. **Peach or Apple Pudding.**—Fill a buttered baking dish with sliced apples or peaches and pour over the top a batter made of 1 tablespoonful of butter, 1 egg, $\frac{1}{2}$ cup of sugar, $\frac{1}{2}$ cup of sweet milk, 1 cup of flour and 1 teaspoonful of baking powder. Bake in a moderate oven until brown. Serve with cream and sugar.

2. **Apple Dicky.**—A lump of butter the size of an egg, 1 cup of sugar, 2 cups of flour, 3 teaspoonfuls of baking powder, $\frac{1}{2}$ cup of water, 1 egg, a pinch of salt; put sliced apples in a baking dish, pour the batter over them and bake.

3. **Black Pudding.**—To one well beaten egg add 1 cup of molasses, 1 cup of water, 1 teaspoonful of soda dissolved in hot water, 1 cup of flour. Do not stir. Add $\frac{1}{2}$ cup raisins, $\frac{1}{2}$ cup currants; stir in flour, raisins and currants; lastly, add 1 pint of bread crumbs. Beat all well together and steam three hours.

4. **Brown Pudding.**—One cup of buttermilk, 2 cups of bread crumbs (graham, white or mixed), 1 teaspoonful of soda. Dissolve soda in milk, let stand until soft. One egg, 1 cup brown sugar, 1 teaspoonful cinnamon, $\frac{1}{2}$ cup butter, 1 cup raisins, 1 cup flour; pour in buttered pan and steam two hours. Good with cream and sauce. Can be steamed over and be as good as fresh.

5. **Bread and Butter Pudding.**—Lay 6 slices of well buttered bread in a pudding dish greased with butter and stew with seeded raisins; next beat 3 eggs with 1 cup of sugar, 1 teaspoonful of vanilla crystals, and stir in 1 quart of milk and fill dish. Bake one-half hour in quick oven.

6. **Bird's Nest Pudding.**—Stew one pint of apples but do not allow them to cook to pieces; sweeten to taste, having them well covered with

juice. Take one cup of sweet milk and stir into it enough flour to make a thick batter, adding to the flour 1 teaspoonful of baking powder, a little salt and sugar. Then drop the batter into the boiling sauce and either steam on the stove or bake in the oven. When done grate over with nutmeg and serve while hot with cream. Peaches, strawberries, blackberries, raspberries, etc., in season, work equally as well as apples.

7. **Cocoanut and Tapioca Pudding.**—One cup of tapioca soaked over night, 1 quart of milk, 1 cup of sugar, yolks of 3 eggs, whites of 2, 2 tablespoonfuls of grated cocoanut; bake half an hour. Use for a frosting the beaten white of one egg, sweetened, with a tablespoonful of cocoanut; brown in oven.

8. **Steamed Chocolate Pudding.**—One cup granulated sugar, yolks of 3 eggs, 3 tablespoonfuls sweet milk, 1 ounce melted chocolate, 1 cup flour, 2 teaspoonfuls baking powder. To the beaten yolks add sugar and beat until light. Beat whites until very light and mix with baking powder and flour, then add quickly to the other mixture. Put a large spoonful in greased cups and steam half an hour. Sauce: One cup sugar, $\frac{1}{2}$ cup of butter, beat to a cream; add 1 teaspoonful vanilla and $\frac{1}{2}$ cup of milk; stir constantly over hot water, cooking until smooth and creamy.

9. **Baked Indian Pudding with Hard Sauce.**—Stir 6 tablespoonfuls of cornmeal into 1 quart of scalded milk, let it cool just a little. Set aside to cool, then add $\frac{1}{2}$ cup of sugar, 2 eggs well beaten, $\frac{1}{2}$ teaspoonful of salt, 1 tablespoonful butter, dust of cinnamon. Bake slowly one hour. Sauce: Stir to a cream a full cup of sugar and scant $\frac{1}{2}$ cup of butter and juice of one lemon.

10. **Fig Pudding.**—Two large cups of grated bread crumbs, 1 pound of chopped figs, 2 tablespoonfuls of powdered sugar, 6 tablespoonfuls melted butter, 4 eggs, 2 cups of milk. Butter a pan and sprinkle with bread crumbs. Steam 4 hours. Eat hot with whipped cream or good sauce.

11. **French Pudding.**—Cut enough thin slices of bread to fill a quart dish half full, buttering each piece lightly before cutting; lay them loosely in the dish and sprinkle over them $\frac{1}{2}$ cup of sugar and a little grated nutmeg. Heat 1 quart of milk, beat the yolks of 4 eggs, add to milk just before boiling and immediately pour over bread. Beat the whites, add a little sugar and spread over the pudding. Set in the oven a few minutes to brown slightly and it is ready for the table. Serve with cream.

12. **Fruit Dowdy.**—One heaping tablespoonful of butter, 3 large (mixing) spoonfuls of flour, salt, 2 teaspoonfuls of baking powder, milk to wet stiff enough to roll. Put any kind of cooked fruit in a basin and the dough over it and bake in a quick oven.

13. **Fruit Pudding.**—Two well beaten eggs, 1 cup each of butter, sugar, molasses and sour milk in which dissolve 1 teaspoonful of soda, $\frac{1}{2}$ nutmeg grated, 1 teaspoonful cinnamon, $\frac{1}{2}$ teaspoonful cloves, 1 pound each of raisins and currants, flour to stir stiff; bake slowly and when wanted slice and steam and serve with the following sauce: One cup sugar, 1 egg, $\frac{1}{2}$ cup butter, scant tablespoonful cornstarch, 1 cup water; cook in double boiler, remove from fire, flavor with lemon or vanilla.

14. **Lemon Pudding.**—Two cups of bread, grated or chopped very fine after removing all the crusts; grated rind of 1 lemon, yolks of 4 eggs, $\frac{1}{2}$ cup of sugar, 1 quart of milk; bake about 20 minutes or half an hour in a good

oven. When done spread whites of 4 eggs, well beaten with $\frac{1}{2}$ cup of sugar and juice of lemon, over the top. Place in the oven and brown lightly.

15. **English Plum Pudding.**—One-half pound currants, $1\frac{1}{2}$ pounds raisins, $\frac{1}{2}$ pound mixed peel or citron, $\frac{3}{4}$ pound bread crumbs, $\frac{3}{4}$ pound of suet, 8 eggs, 1 wine-glassful brandy. Stone and cut raisins in halves. Wash and dry the currants. Mince suet fine; cut candied peel into thin slices and grate bread into fine crumbs. When all these are prepared mix them well together and moisten the mixture with the eggs well beaten and the brandy, and put the pudding into a floured cloth and boil 5 or 6 hours. When done hang up to drain. The day it is to be eaten put into boiling water and boil 2 hours, then turn it out of the cloth and serve with any kind of sauce you may prefer.

16. **Simple Plum Pudding.**—One cup milk, 1 cup suet chopped fine, $\frac{1}{2}$ cup currants, 1 cup raisins, 1 cup Orleans molasses, $1\frac{1}{2}$ cups flour, 1 tablespoonful citron cut fine, 1 teaspoonful soda, 1 teaspoonful ginger, $\frac{1}{4}$ teaspoonful cloves. Heat the milk and suet together slowly but do not boil. Strain through a sieve to take out lumps. Then add molasses and flour and soda, dissolved in a little hot water; lastly, the spices and fruit, cutting the raisins in two and flouring them; add a pinch of salt. Put buttered paper in bottom of the pudding dish and steam the pudding 4 hours. Foam Sauce for Plum Pudding: One cup powdered sugar, 2 eggs, $\frac{1}{2}$ cup boiling milk. Beat whites and yolks separately. Add sugar to yolks and work it in, then pour on the boiling milk. Set it in very hot (but not boiling) water, stirring now and then until wanted; then beat in lightly the frothed whites and flavor with vanilla, nutmeg or bitter almond.

17. **Prune Pudding.**—Soak one pound of prunes over night, cook soft, remove seeds and whip smooth while hot; 1 cup pulverized sugar. Beat the whites of 2 eggs to a stiff froth, add to the prunes, put in a pudding dish and brown in the oven. Serve with cream when cold.

18. **Quick Puff Pudding.**—Stir one pint of flour, a little salt and 2 teaspoonfuls baking powder into milk until very soft. Place cups well greased with butter in a steamer, put into each cup a small tablespoonful of batter, then berries or other fruit, then another spoonful of batter; cover and steam 20 minutes. Serve with cream or pudding sauce.

19. **Rice Pudding.**—One quart creamy milk, 1 cup rice, 4 eggs, 1 tablespoonful butter, one cup of sugar and a pinch of salt. Boil rice in one pint of milk until tender; remove; add eggs, sugar, milk and salt. Pour into pudding dish; add butter in broken pieces on top. Bake in steady oven for half an hour. Serve with simple dressing.

20. **Sponge Pudding.**—One cup of sugar, 1 small teaspoonful of butter, yolk of 1 egg, 1 cup of milk, 3 cups of flour, 3 even teaspoonfuls of baking powder. Steam 1 hour. Sauce: One-half cup of butter, yolk of one egg, 1 cup of sugar. Mix well, cook and then add the beaten white of the egg and flavor.

21. **Suet Pudding.**—One-half cup of sugar, 1 cup of molasses, 1 cup sour milk, 1 cup suet, 1 cup raisins, 3 cups of flour, $\frac{1}{2}$ teaspoonful of soda and salt, 1 nutmeg, and cinnamon. Steam for 3 hours and serve with dip.

22. **Cherry Puffs.**—Five teaspoonfuls baking powder, 1 teaspoonful salt, 1 cup flour, 2 teaspoonfuls of butter, $\frac{1}{2}$ cup of milk, 1 cup of canned cherries. (All measurements level.) Mix the dry ingredients; put in the butter; add the milk and, when well mixed, the cherries. Steam in buttered molds for 45 minutes.

Serve with foamy sauce. Foamy Sauce:—Cream $\frac{1}{4}$ cup of butter; add $\frac{1}{2}$ cup of powdered sugar; mix well; add 3 tablespoonfuls of cream and 1 tablespoonful of vanilla.

23. **Strawberry Shortcake.**—Two cups of flour, 2 tablespoonfuls of sugar, 2 teaspoonfuls of baking powder, $\frac{3}{4}$ cup of milk, $\frac{1}{4}$ cup of butter, 1 egg.

24. **Vegetable Pudding.**—One cup of grated potatoes, 1 cup of grated carrots, 1 cup of brown sugar, 1 cup of chopped suet, 1 cup of flour (after sifting), $\frac{1}{2}$ teaspoonful of soda in 1 tablespoonful of water, $\frac{1}{2}$ teaspoonful of salt, 1 cup of chopped currants, 1 cup of chopped raisins, allspice to taste. Steam for 3 or 4 hours.

25. **Crystallized Apples.**—Boil 1 cup of sugar in 2 cups of water for 5 minutes. Pare and core as many apples as desired and place in pan without crowding; cook till tender; lift out carefully and put in baking pan. Sprinkle well with sugar and brown slightly in moderate oven. Boil down the syrup to about a cupful; pour around but not on the apples. When cool place in a glass dish with a little currant jelly on each apple.

26. **Cherry Pudding.**—One cup sour milk, 1 teaspoonful soda, 1 cup sugar, 1 egg, 1 cup seeded cherries, flour enough to make a stiff batter; place in cloth, allowing room for raising; steam 40 minutes.

27. **Currant Pudding.**—One-half pound raisins, 1 pound currants, $\frac{1}{2}$ pound of finely chopped suet, 2 cups of sugar, 2 eggs, 1 nutmeg, 2 teaspoonfuls of cinnamon, 2 teaspoonfuls of baking powder, 1 teaspoonful soda, 1 cup milk, 1 cup water. Mix together and boil for 5 hours. Serve with cream or dip.

28. **Chocolate Pudding.**—One cup of bread crumbs, 1 pint of milk; put this in a double boiler and scald; yolks of 2 eggs, $\frac{1}{2}$ cup sugar, 1 teaspoonful vanilla and $1\frac{1}{2}$ teaspoonfuls of cocoa or chocolate. Add the milk and bread crumbs to this and bake for 5 or 10 minutes. When done spread beaten whites of 2 eggs and brown. To be eaten with whipped cream.

29. **Rice Pudding.**—Three tablespoonfuls of rice, $\frac{1}{2}$ cup sugar, 1 quart of milk; bake slowly 2 hours.

30. **Cheap Pudding.**—One quart of flour, 1 cup chopped suet, $1\frac{1}{2}$ teaspoonfuls baking powder; rub flour and suet together; $\frac{1}{2}$ pound raisins, a pinch of salt, 1 teaspoonful of ground cinnamon, 1 teaspoonful of ground cloves, 1 cup sugar. Mix with water or milk and steam 2 hours.

31. **Cottage Pudding.**—One cup milk, 1 cup sugar, 1 egg, lump of butter the size of an egg, 1 pint of flour, a pinch of salt, 1 heaping teaspoonful baking powder. Sauce:—One egg, 1 cup sugar, 1 teaspoonful flour, small piece of butter; mix and add boiling water; let come to boil; flavor with vanilla.

32. **Brown Betty.**—Soak old or hard bread and line baking dish with these crumbs. Then put in a layer of apples sliced very thin over which sprinkle sugar and add little bits of butter; make alternate layers of crumbs and apples till dish is full, having the last layer of crumbs. Sprinkle this well with sugar and bits of butter and cinnamon; add $\frac{1}{2}$ cup water and bake half an hour. To be eaten with sweetened cream.

33. **Lemon Rice Pudding.**—One quart of milk, 1 cup rice, yolks of 2 eggs, pinch of salt; cook in slow oven until rice is soft. Beat the whites of 2 eggs, 1 cup sugar, the juice and grated rind of 1 lemon; put on top and return to the oven to brown.

34. **Date Pudding.**—Cream a lump of butter the size of an egg with 1 cup of sugar. To this add the beaten yolks of 2 eggs, $\frac{1}{2}$ cup of milk and the whites of 2 eggs beaten to a stiff froth; also $2\frac{1}{2}$ scant cups of flour and 1 large teaspoonful of baking powder; then add dates or other fruit. Sauce: One egg, 3 tablespoonfuls sugar, 1 tablespoonful of flour; boil and then add extract.

35. **Cup Pudding.**—For the batter use 2 eggs, 1 cup sugar, $1\frac{1}{2}$ cups of flour, $\frac{1}{2}$ cup of milk, butter size of walnut, 2 teaspoonfuls baking powder. Fill cups half full of berries or any kind of fresh fruit; place sufficient sugar over the fruit and a spoonful of batter over all; steam 30 minutes. Serve with a sauce.

36. **Orange Pudding.**—Peel 4 large oranges and take out all seeds and white. Cut in small pieces. After covering with sugar, let stand 2 hours; then take 1 pint of milk, 2 tablespoonfuls cornstarch, yolk of 1 egg, 1 cup sugar; cook in double boiler until thick; pour over oranges and stir all together. Beat white of egg, add a small amount of sugar and cover pudding. Brown in oven.

37. **Quick Apple Dumplings.**—Pare and cut into small pieces 6 quick cooking apples; lay these in a deep baking dish or pan; sprinkle sugar over them. Make a batter of 3 cups of flour in which 2 teaspoonfuls of baking powder have been sifted, and a pinch of salt; add enough water to make a very stiff batter, spread this over the apples and steam 30 minutes. To be eaten with sweetened milk or cream.

38. **Snow Pudding.**—Over $\frac{1}{2}$ box of gelatine pour 1 pint of boiling water; add the juice of 1 lemon and $1\frac{1}{2}$ cups of sugar; when nearly cold, stir in the whites of 2 eggs beaten to a stiff froth. Serve with boiled custard.

39. **Fruit Roll.**—One egg, $\frac{1}{2}$ cup sugar, $1\frac{3}{4}$ to 2 cups of milk, 1 teaspoonful of salt, 4 cups sifted flour, 4 teaspoonfuls of Rumford Baking Powder, 1 cup cleaned currants or chopped raisins. Sift flour, salt, sugar and baking powder together; beat egg light and add to milk; flour the fruit and mix all together. Let stand 20 minutes and bake in a moderate oven $1\frac{1}{4}$ hours; cover with buttered paper if baked in open pan. Butter the top with melted butter if covered pans are used. Be sure to cover close while it is standing the 20 minutes.

40. **Bread Pudding.**—One pint grated bread crumbs, 1 quart milk, 1 teaspoonful butter, 1 teacup sugar, 3 eggs, saving whites of two for frosting. While pudding is baking heat the two whites until very stiff; add $\frac{1}{4}$ cup of sugar and spread on pudding as soon as it comes from oven; then set in oven again to brown.

41. **Fruit Juice Blanc Mange.**—Sweeten 1 cup of fruit juice to taste; then stir 1 tablespoonful of cornstarch into a little of the juice and then into all. Boil until as thick as desired.

42. **Raspberry Float.**—One pint red raspberries, 1 pint boiling water, 1 cup sugar, 4 level tablespoonfuls cornstarch, 1 tablespoonful lemon juice; put the sugar and cornstarch into a sauce pan, mix thoroughly, pour in boiling water and stir constantly over the fire until clear; remove, add lemon juice and berries and serve very cold with cream.

43. **Gelatine Jelly.**—One box of Cox's gelatine, 1 pint of cold water to

dissolve it, then 3 pints of boiling water, 2 pounds white sugar, 1 pint white wine and the juice of 3 lemons; pour into a mold and set on ice.

44. **Fruit Puff Pudding.**—One pint flour, 2 teaspoonfuls baking powder and 1 teaspoonful salt, mixed thoroughly. Make into a soft batter with milk. Put into greased cups 1 spoonful of batter, then apples or other fruit and cover with another spoonful of batter. Steam $\frac{1}{2}$ hour and serve with liquid sauce as follows: One cup sugar, $\frac{1}{4}$ cup butter worked to a cream; put $1\frac{1}{2}$ cups water in a sauce pan; when it begins to boil thicken with flour (mixed in cold water) to a consistency of cream. Take from the fire and stir rapidly into the butter and sugar. Flavor with nutmeg or any desired flavoring. For a sour sauce use vinegar.

45. **Prune Whip.**—Beat whites of 4 eggs stiff; add small cup sugar, $\frac{1}{2}$ teaspoonful vanilla, $\frac{1}{2}$ cup stewed prunes pitted and chopped fine. Put into buttered baking dish and bake 20 minutes in a moderate oven.

46. **Blanc Mange.**—Dissolve one-half box of gelatine by soaking it in a half cup of cold water for an hour. Blanch four ounces of sweet almonds and one-half ounce of bitter almonds and pound them together in a mortar occasionally moistening with orange-flower water. Put the pounded almonds into one quart of fresh cream, set them over a fire and stir constantly till they come to a scald and then pour in the gelatine.

SAUCES.

Use brown or powdered sugar for sauces and do not boil them after the butter is added. Instead of wine or brandy, grape or other fruit may be used as a sauce flavor.

1. **Cream Sauce for Puddings.**—One-third cup of milk, 1 pint of cream, $\frac{1}{3}$ cup powdered sugar, $\frac{1}{2}$ teaspoonful vanilla. Mix the cream and milk and beat until stiff with an egg beater. Add sugar and vanilla.

2. **Hot Chocolate Sauce for Ice Cream or Pudding.**—In a granite sauce pan place 1 pound of light brown sugar, $\frac{1}{4}$ pint fresh milk, 2 ounces of chocolate grated, 1 ounce of good butter. Boil together until it forms a soft ball when dropped into cold water. Take from the stove and flavor with vanilla. Serve hot; can be made beforehand and heated when wanted.

3. **Hard Sauce.**—One cup powdered sugar and $\frac{1}{4}$ cup of butter creamed together, 1 teaspoonful of vanilla.

4. **Lemon Sauce.**—One tablespoonful butter, 1 tablespoonful cornstarch, $\frac{1}{2}$ cup sugar, 1 egg, 1 pint boiling water; put cornstarch, egg, sugar and butter together and beat well, then pour over them the boiling water and stir over fire until thick; take from fire and add as much lemon juice as desired.

5. **Pudding Sauce.**—One-half cup butter, 1 cup sugar, 1 tablespoonful flour, 1 pint boiling water; boil; add desired flavor.

6. **Fig Sauce.**—Soak figs in cold water or a little sour cider all night; the cider is better. Then boil them gently until they are tender. Just before taking them from the fire add sugar to your taste. If you do not use cider the juice of one or two lemons should be used to prevent the sauce from tasting insipid.

CREAMS AND CUSTARDS.

"An't please your Honour," quoth the Peasant,
"This same dessert is very pleasant."

—*Pope.*

We give herewith a recipe that is the ground work of all creams made with custard:—

Stir two ounces of lump sugar, or sufficient for the purpose required, into a pint of boiling milk. Have ready the beaten yolks of four eggs and pour the boiling milk over them. Put into a stew pan, place over a slow fire and stir with a wooden spoon as briskly as possible for twenty minutes or until it begins to thicken; then set on the coolest part of the range where it cannot simmer and let it stand for fifteen minutes, stirring occasionally. When the custard is ready it should be poured into a basin and flavored with vanilla, lemon or almond. Stir until cool so as to prevent a skin forming over the top.

The secret of making a custard is in the stirring and when this is properly done, a custard made with milk and the number of eggs given in this recipe will be as rich as one made with cream and a greater number of eggs.

For cream and custards, eggs should be beaten in stone or earthenware but never in tin.

Custard should always be baked slowly in a moderate oven for too much heat will turn it to whey. The rule for a custard to bake is one cup of sugar, four eggs and one-half teaspoonful of salt to a quart of milk.

In boiling custard always use a double vessel. It is well to bake custards in small cups to be served to each person.

Remember that nutmeg and cinnamon are used with sugar, and cloves and allspice with meats.

Only the outer part of lemon rind should be used. A good way is to rub it off with hard lumps of sugar. The sugar thus becomes saturated with the oil of the lemon.

1. **Apple Float.**—Beat the whites of 4 eggs to a stiff froth; add 4 large tablespoonfuls of powdered sugar and beat until fine and dry; pare 2 large, tart apples and grate into this mixture a little at a time, beating all the while. Have ready a good sized glass dish partly filled with whipped cream; heap this by tablespoonfuls over the surface and dot here and there with candied cherries.

2. **Apple Snow.**—Peel and grate 2 small sour apples, sprinkling over it a small cup of powdered sugar as you grate, in order to keep it from turning dark. Break the whites of 2 eggs into this and beat it constantly for half an hour. Have it on a large platter as it beats up very stiff and light. Heap in a glass dish, pour a fine, smooth custard around it and serve.

3. **Banana Pudding.**—Two eggs, 1 quart of milk, $1\frac{1}{2}$ teaspoonfuls of cornstarch or flour, 1 teaspoonful of vanilla, 4 tablespoonfuls of sugar; cook in double boiler and when cool pour over 6 bananas sliced very thin. It is like ice cream.

4. **Bavarian Cream.**—One and one-half pints of milk, $\frac{1}{2}$ box of gelatine soaked in $\frac{1}{2}$ pint of water, 3 eggs, 1 cup of sugar, salt. Put sugar and milk on to heat, then put in yolks mixed in a little of the cold milk, then add gelatine and the whipped whites of the eggs. Pour over bananas or fruit if desired.

5. **Charlotte Russe.**—Soften 1 teaspoonful of gelatine in enough cold water to cover. When well soaked add a little boiling water to dissolve it and 4 heaping tablespoonfuls granulated sugar. When cool strain slowly into a pint of rich cream that has been chilled and whipped to a stiff froth, beating all the time while adding ingredients. Flavor to fancy.

6. **Cherry Tapioca.**—Soak over night 4 tablespoonfuls of tapioca in a pint of water. Take a pint of stoned cherries, add their juice to the tapioca, stir in a pint of water and enough sugar to sweeten, boil gently for 15 minutes. Add the fruit and boil 5 minutes more. Serve very cold with plain or whipped cream.

7. **Custard.**—One tablespoonful of flour, 2 of butter and 4 of sugar; stir to a cream, add the white of 1 egg, pour $\frac{1}{4}$ pint of boiling water over, stirring constantly. When cool, add 1 teaspoonful of vanilla.

Cake Part for Above.—One-half cup of sugar, yolk of one egg, 1 teaspoonful of baking powder, 4 tablespoonfuls of water, $1\frac{1}{2}$ cups of flour.

8. **Custard Souffle.**—Two scant tablespoonfuls each of flour and butter, 2 tablespoonfuls of sugar, 1 cup of milk and 4 eggs; let the milk come to a boil. Beat flour and butter together; add gradually to the boiling milk and cook 8 minutes. Beat the sugar and yolks together, add to the cooked mixture and set away to cool. When cool add the well beaten whites of eggs. Pour into a well buttered pudding dish, bake 20 minutes and serve with a creamy sauce.

9. **Fruit Jelly.**—Soak $\frac{1}{2}$ box of gelatine in 1 pint of cold water until dissolved; then add 2 cups of sugar, pulp and juice of 1 lemon, 1 pint of boiling water. Strain over any fruit desired and let thicken.

10. **Mock Whipped Cream.**—To one large, sour apple, peeled and grated, add the white of one egg and one cup of sugar; beat all together a long time; flavor with vanilla. Mix apple with sugar as soon as possible after grating to keep the apple from turning dark. This is used like whipped cream and is delicious. Very nice served on squares of sponge cake.

11. **Orange Float.**—Slice 2 oranges and lay in sugar for an hour or longer. Make a custard of one pint of water, 1 heaping tablespoonful of cornstarch, 1 cup of sugar and the juice of 1 lemon; cook until as thick as custard and when cold pour over the oranges. If desired place the beaten whites of 2 eggs on top, sweetened, and brown in oven.

12. **Pretty Pudding.**—One cup of water, 1 cup of fruit juice, a pinch of salt, a little sugar if needed, 3 tablespoonfuls of cornstarch; boil 10 minutes, take off and beat in whites of 2 eggs. Cool and serve with a sauce made of 1 pint of milk, 3 tablespoonfuls of sugar and the yolks of 3 eggs. Cook and flavor.

13. **Pink Cream.**—Three gills of currant or strawberry juice. Mix with $\frac{1}{2}$ pound of powdered sugar, $\frac{1}{2}$ pint of thick cream; whisk until well mixed and serve in a glass dish.

14. **Raspberry Whip.**—One cup of powdered sugar, white of one egg, $1\frac{1}{4}$ cups of berries. Put all in a bowl and beat with wire whisk about half an hour, or until stiff enough to hold in shape. Pile lightly on dish, chill, surround with lady fingers and serve with thick cream. Strawberry whip may be made in the same way.

15. **Russian Cream.**—Soak $\frac{1}{2}$ pound of gelatine for half an hour in a little water; 1 cup of sugar, 1 quart of milk, 4 eggs; mix sugar, milk, yolks of eggs and gelatine together. Set in a kettle of water and boil 20 minutes.

Beat the whites stiff and stir into the custard after taking from the fire. Flavor with vanilla and serve with whipped cream.

16. **Spanish Cream.**—Cover one-third box of Cox's gelatine with cold water and let it stand for an hour. It should then have absorbed all the water. Heat three cups of milk; add to it the beaten yolks of 3 eggs, a cup of sugar and the gelatine, with a half teaspoonful of salt. Stir this over the fire and as soon as it comes to a boil remove it to a table and add the beaten whites of 3 eggs and half a teaspoonful of vanilla. Pour this into molds and cool. Give it time enough in a cool place until it becomes firm.

17. **Strawberry Foam.**—Mash 1 quart of strawberries with 1 large cup of sugar; rub through a sieve; add $\frac{1}{2}$ ounce of gelatine, dissolved and strained. Whip 1 pint of cream; beat the whites of 2 eggs and fold into the strawberry juice; set on ice to chill. Serve in glasses with fancy cakes.

18. **Velvet Cream (Elegant).**—Put 3 large spoonfuls of pulverized sugar into $\frac{1}{2}$ pint of cream beaten to a stiff froth; add a large spoonful of gelatine dissolved in a little water. Flavor with a teaspoonful of brandy or tablespoonful of sherry; let harden and serve with any fruit juice.

19. **Kiss Pudding.**—Beat the yolks of 3 eggs with $\frac{1}{2}$ cup of sugar till light; add $1\frac{1}{2}$ tablespoonfuls of cornstarch; stir in 1 pint of boiling milk; stir on the stove until thick; pour into a pudding dish; beat the whites of the eggs with $\frac{1}{2}$ cup of sugar and spread over the top and brown.

20. **Spanish Cream.**—Make a soft custard of 1 quart of milk, 6 tablespoonfuls of sugar, 6 eggs; put 1 box of gelatine dissolved in 1 pint of water over the fire; add the custard; flavor.

21. **Apple Custard.**—Take 1 pint of mashed stewed apples, 1 pint of sweet milk, 1 cup of sugar, 4 eggs and a little nutmeg; bake slowly.

22. **Charlotte Russe.**—Three-fourths quart of rich cream, $\frac{1}{2}$ pint boiling milk, 2 tablespoonfuls gelatine, 2 tablespoonfuls pulverized sugar, 1 teaspoonful vanilla. Put gelatine to soak in a little cold milk, then pour the boiling milk over it. To the cream add sugar and vanilla and whip till stiff; strain the milk containing gelatine and when cold mix with whipped cream, beating while mixing. Lay some slices of stale sponge cake or some lady fingers in a mold; pour mixture over them and set aside until stiff.

23. **Lemon Gelatine.**—One-half pint cream, whipped, 1 cup gelatine, 2 cups granulated sugar boiled to a syrup with water and set aside to get cold; 1 cup ground pineapple improves it; vanilla to taste.

ICE CREAMS, SHERBETS AND ICES.

"Give us the luxuries of life, and we will dispense with the necessities."

Ice cream is richer when cream is used instead of milk; however, milk alone may be used or milk and cream together. A number of varieties are obtained by adding various flavors and colors to vanilla ice cream, so we will first give a recipe for it. In making such ice cream as lemon, etc., from vanilla ice cream where the extract is used without the fruit, add one tablespoonful of extract to one gallon of vanilla ice cream. Ice cream expands in freezing so that the freezer does not need to be filled at first.

In making ices be sure to use enough sugar and fruit for part of their

taste is lost in freezing. There must be enough fruit, also, to give body to the ice.

1. **Vanilla and Lemon Ice Cream.**—To make a gallon freezer full, take $2\frac{1}{2}$ quarts of cream, 18 ounces of granulated sugar, 3 eggs well beaten and 1 tablespoonful of vanilla extract. Freeze until stiff. To make lemon ice cream add 1 tablespoonful of lemon extract to a gallon of vanilla ice cream.

2. **Chocolate Ice Cream.**—Shave 4 ounces of bitter chocolate very fine and add to it, a little at a time, 1 teacup of hot cream, rubbing continually with a spoon till the chocolate is all dissolved and smooth. Whip this thoroughly into one gallon of vanilla ice cream.

3. **Strawberry Ice Cream.**—Wash 1 quart of strawberries, cover with sugar and let stand until the sugar is dissolved, then pass through a fine cloth; add 1 tablespoonful of strawberry extract and whip into a gallon of vanilla ice cream.

4. **Banana Ice Cream.**—Remove all dark spots from 4 bananas, mash thoroughly and whip into 1 gallon of vanilla ice cream.

5. **Almond Ice Cream.**—One pint of blanched almonds, 1 pint of milk, 1 quart of cream, 1 cup of sugar. Brown the almonds, then pound them to a paste in a mortar; cook the milk and pounded almonds together, then add the sugar and cook for a few moments; strain the mixture through a sieve, pressing through as much of the almond as possible; when cold add the cream and $\frac{1}{2}$ teaspoonful of almond extract. Freeze and when hard let stand 2 hours to ripen.

6. **Caramel Ice Cream.**—Put 1 quart of milk in a double boiler; when hot add 1 tablespoonful of cornstarch moistened with milk, yolks of 4 beaten eggs and $\frac{1}{2}$ cup of sugar; boil to the consistency of custard. Scorch 1 cup of maple molasses or $\frac{1}{2}$ pound maple sugar; add a little water to it, then add to the custard; cool, add 1 pint of cream and freeze.

7. **Cocoanut Ice Cream.**—Grate a large cocoanut very fine; add a cup of sugar and the cocoanut to a quart of cream and a little milk; when half frozen add the well beaten white of an egg.

8. **Macaroon Ice Cream.**—One scant cup of sugar, 1 quart of cream, flavor to taste. If it is not wanted so rich a little milk may be added. Set $\frac{1}{2}$ pound of macaroons in the oven for a few minutes to become brittle; roll fine and stir into the cream and freeze.

9. **New York Ice Cream.**—Scant half cup of flour, 1 pint of milk, 2 well beaten eggs. Mix flour smooth with a little of the milk; add to the rest of the milk and the beaten eggs and $\frac{1}{2}$ cup of sugar; boil in a double boiler; when cool add 1 quart of cream and strain. When nearly frozen add candied fruit that has been cut fine and soaked in 2 tablespoonfuls of sherry, and one more cup of sugar.

10. **Peach Ice Cream.**—Slice very ripe fruit and let stand in sugar an hour or two; before using run through a potato masher, or coarse cheese cloth, and add to the partly frozen ice cream. If desired, one or two peaches cut fine but not mashed, may be added at the last. A quart of peaches to a cup of sugar is a good proportion.

11. **Pineapple Ice Cream.**—One pint of milk, 1 quart of cream, 1 can of grated pineapple, 1 pound of sugar, the white of an egg and the juice of a lemon. Heat the milk to the boiling point, stir in the sugar, and set aside to cool; as soon as the milk is cold add the cream and pineapple and freeze.

12. **Raspberry Ice Cream.**—One large cup of sugar, 1 quart of raspberries, 1 quart of cream, 1 pint of milk; mash the sugar and berries and let them stand half an hour, then squeeze them through cheese cloth; after this has been done pour the milk on the pulp and squeeze again until perfectly dry. There should be nothing left in the cloth but seeds. Add to the cream and freeze. Some add the juice of a lemon.

13. **Roman Cream.**—Put $\frac{1}{4}$ box of gelatine into 1 quart of milk; soak a little while, then add the beaten yolks of 2 eggs and 1 cup of sugar; cook for a few minutes, then add the beaten whites; cool and freeze. To give it a caramel flavor, scorch some of the sugar.

14. **Lemon Ice.**—Take the juice of 6 or 8 lemons and the grated peel of three. Sweeten with sugar or syrup to taste, remembering that part of the flavor is lost in freezing. Add 2 eggs well whipped and $\frac{1}{2}$ ounce of gelatine dissolved in hot water. Strain the whole and freeze.

15. **Orange Ice.**—Using oranges in place of lemons proceed as for lemon ice. Add the juice of the two or three lemons as the taste of orange alone is not sufficiently distinct in an ice.

16. **Cherry Ice.**—Take $2\frac{1}{2}$ quarts of cherry juice and the juice of 2 lemons. Add a few drops of the essence of bitter almonds and cochineal to color. Sweeten to taste and freeze.

17. **Currant Ice.**—Take 3 pints of ripe currants, 1 pint of red raspberries and $\frac{1}{2}$ pint of water. Simmer for a few minutes, strain through a hair sieve, add another $\frac{1}{2}$ pint of water and 12 ounces of sugar and it is ready for freezing.

18. **Strawberry Ice.**—Take 4 pounds of fresh strawberries and the juice of 2 or 3 lemons; color with cochineal and sweeten to taste. The strawberries and lemon juice with a little sugar should be passed through a sieve, then the rest of the sugar and the color should be added before freezing.

19. **Cranberry Ice.**—Stew 1 quart of cranberries in enough water to cover them. When they are soft, mash and strain through a sieve; add one pound of sugar; dissolve one package of lemon Jell-o in a pint of warm water; add to the berries and when cold, freeze.

20. **Peach Ice.**—Four cups granulated sugar, 1 can peaches, juice of 3 lemons, whites of 2 eggs, 3 pints water. Cook peaches, lemon juice and sugar together; when cool, add chopped peaches and whites of eggs; freeze.

21. **Currant Sherbet.**—One pint of red currant juice, one pound sugar, juice of 3 lemons, 1 pint of boiling water. Dissolve sugar in boiling water; when cold, add currant juice and freeze. Makes 3 pints.

22. **Lemon Sherbet.**—One cup of sugar, 1 pint of milk, 1 lemon. Partly freeze the milk and sugar; then add the strained juice of the lemon and freeze stiff. A little cream will improve it. This will make one quart. If desired, one can of pineapple may be added.

23. **Green Grape Sherbet.**—Strain one quart of grapes through a cloth; sweeten to taste. If too acid add from a pint to a pint and a half of water. Beat the whites of 4 eggs, and put the mixture into the freezer and turn slowly until frozen. This quantity makes a good gallon when finished. It is very white and beautiful and the medical properties of grape juice render it highly digestible.

24. **Orange Sherbet.**—One scant pint of cold water, 1 tablespoonful of gelatine, 1 cup sugar, 6 oranges or one pint orange juice, $\frac{1}{2}$ cup boiling water. Soak gelatine for 10 minutes in $\frac{1}{2}$ cup of cold water; put sugar and

remainder of cold water into pitcher, also the orange juice; if the oranges are very sour add more sugar. Dissolve the gelatine in the boiling water and add to the mixture. Strain into the can and freeze.

25. **Pineapple Sherbet.**—Three lemons, 1 can of pineapple, 3 cups of sugar, 2 quarts of water, whites of 3 eggs. Whip the whites until stiff and add to the mixture after it is frozen; turn awhile to thoroughly mix it.

26. **Bisque Glacé.**—One pint sweet milk, 1 quart cream, 1½ dozen macaroons, ½ pint sherry wine, ¼ box of gelatine; roll macaroons and soak in wine; let milk come to a boil and pour over gelatine undissolved. When cold mix all together, sweeten to taste and freeze.

27. **Frozen Fruit.**—Six oranges, 1 ten-cent can of pineapple, 1 pound white grapes, 4 lemons, 1 fifteen-cent bottle of cherries, 4 large cups sugar, 1 tablespoonful of gelatine. Cut the cherries and grapes in halves, and pineapple into small pieces; divide the oranges into quarters and remove all pith and dividing skin as far as possible, cutting the fruit into small pieces. Add the juice of the lemons and the gelatine dissolved in cold water and the sugar. Freeze shortly before serving, about as one would freeze sherbet, being careful not to make it too solid. This will serve about 40 people if served in small sherbet cups and costs, including ice to freeze, about 75 cents.

28. **Maple Frappé.**—One large cup of maple syrup, yolks of 4 eggs; cook until smooth, cool, and add 1 quart of cream; freeze. This is sufficient for 10 people.

29. **Three of a Kind.**—The juice of 3 lemons and 3 oranges, 3 bananas, mashed fine, 3 scant cups of sugar, 3 cups of water. Mix and freeze. This will make 2 quarts.

30. **Plum Glacé.**—One and one-half pounds of conserves, pears, pineapple, cherries, plums, etc. Bake a sponge cake in a long pan, cut in slices, soak the cake in 1 pint of Angelica wine. Make a custard of 1 quart of milk, the yolks of 4 eggs, 2 tablespoonfuls of flour, a little salt and sweeten to taste; let cool. Put a layer of fruit and cake in mold, then pour over custard. Freeze 12 hours with a tight lid over it—like ice cream, only do not stir. Serve with whipped cream flavored with pineapple.

31. **Tutti Frutti.**—When vanilla ice cream is partially frozen add candied cherries, chopped citron, chopped raisins or other candied fruit chopped rather fine. Use about half the quantity of fruit that there is ice cream.

BEVERAGES.

Including Punch, Fruit Juices and Home-Made Wines.

Drink, pretty creature, drink.—*Wordsworth.*

"Polly, put the kettle on, and we'll all take tea."

1. **Dandelion Wine.**—One full quart of dandelion blooms, 1 gallon water, 1 lemon cut in slices (not peeled), 2½ pounds of sugar. Put in a kettle

and boil 5 minutes, then pour into a jar; when cold, add 2 tablespoonfuls of good yeast. Keep in a warm place 3 days until it ferments, then strain and bottle; cork tightly.

2. **Grape Juice.**—Three pounds of sugar to two baskets or 20 pounds of grapes. Wash and break from the stems, barely cover with water, mash and boil from 15 to 20 minutes; then let it slowly drain through cheese cloth; add the sugar and let boil again. Bottle and seal immediately.

3. **Punch.**—Juice of 3 oranges, juice of 3 lemons, 3 cups of sugar, 2 quarts of water, 1 pint of port wine or fruit juice and add a few cherries or pineapple, chopped.

4. **Elder Blossom Wine.**—Add 1 gallon of boiling water to 1 quart of elder blossoms and let stand 1 hour; then strain and add 3 pounds of sugar; boil a little and skim. Let stand until lukewarm; then add 1 lemon, sliced fine, and 1 tablespoonful good yeast. Let stand 24 hours. Then strain and put into bottles or jugs, filling full until all impurities are worked out. Be sure to fill up jugs as fast as it works out, and the wine will be a beautiful amber color. In making this wine, great care should be taken to keep all stems out, as they make the wine taste rank and give it a dark color.

5. **A Grapefruit Cocktail.**—Break up the pulp of 2 grapefruit and pour over it $\frac{1}{2}$ pint of brandy and $\frac{1}{2}$ pint of sherry. See that this covers the fruit. Sprinkle with sugar and let stand over night. In the morning add $\frac{1}{2}$ pint of maraschino cherries and the liquor. This may be strained and served without the fruit if preferred.

6. **Raisin Wine.**—Two pounds of raisins, seeded and chopped fine, 1 pound of sugar, 1 lemon and about 2 gallons of boiling water. Put into a stone jar and stir daily for 6 or 8 days; then strain and bottle and put in a cool place for 10 days and it will be ready for use.

7. **Roman Punch.**—Make a rich punch of oranges, lemons and pineapple. When partly frozen pour into it a pint of rum; some also add the sweetened whites of two eggs. All of the punch can be added or a part reserved and poured over the mixture after placed in the glasses.

8. **Tea Punch.**—Six oranges, 6 lemons, 6 bananas, 1 can grated pineapple. Make strong tea, about 2 quarts; add sugar to taste and serve ice cold.

9. **Communion Wine.**—Twenty pounds of grapes after taking off the stems, 6 quarts of water, 6 pounds granulated sugar. Put grapes and water in stone or earthen jars over the fire until the skins and seeds separate from pulp. Strain through cheese cloth and return to jars; add sugar and mix thoroughly, using china cup or wooden spoon; use no tin, iron or even silver about the wine. Strain again through fresh cheese cloth and put in jars over the fire. Do not boil it hard but allow it to heat gradually until it begins to simmer or stir from the heat. Bottle at once.

10. **Kentucky Egg Nog.**—Stir $\frac{2}{3}$ of a cup of sugar into 6 eggs that have been beaten until light. When dissolved add 12 tablespoonfuls of best whiskey. The whiskey is intended to cook the egg and the quantity used depends upon its strength. Mix a pint of rich cream with the other ingredients. This makes 6 glasses of egg nog. Grate a little nutmeg over the top of each glass when filled.

11. **Lamb's Wool.**—Boil 3 quarts of sharp cider down to 2 quarts and while it is still boiling add a teacup of brown sugar, also a teaspoonful each

of allspice, ginger, cloves and cinnamon; place the spice in a bag so it can be removed. Core and bake 6 good cooking apples until well done, scoop the apple out of the peel and put through a sieve. While the apples are still hot add them, with $\frac{1}{2}$ teacup of brandy, to the cider and serve hot.

12. **Cream Toddy.**—First whip a pint of rich sweet cream, then put 3 tablespoonfuls of whiskey and 2 teaspoonfuls of sugar in a glass and fill with whipped cream and stir well; two or three candied cherries may be placed on each glass.

13. **Wassail Bowl.**—With half a pound of Demerara sugar mix $\frac{1}{2}$ ounce of grated ginger, a pinch of powdered cinnamon and half a grated nutmeg. Put this into a sauce pan with a pint of ale, and let it boil; then stir in two more pints of ale, half a bottle of Madeira, sherry or raisin wine, and a large lump of sugar which has been rubbed on a fresh lemon rind until the yellow part is taken off. Now let the wine get very hot but do not let it boil. Pour it into a bowl and throw into it six roasted apples and half a small lemon cut in slices with the white pith cut out. Serve very hot.

14. **A Cranberry Drink.**—Put $\frac{1}{2}$ pint of cranberries over the fire to boil. In another vessel boil half a gallon of water, the peel of half a lemon and an ounce of oatmeal for ten or fifteen minutes, then add the cranberries and water and a little sugar but not enough to take away the acid of the fruit; put in 2 glasses of wine. Boil for 20 minutes, strain and serve cold.

15. **Orange Toddy.**—Take two ounces of powdered sugar, four ounces of strained orange juice, a strip or two of orange rind, half a pound of crushed ice and two ounces of old whiskey. A little shredded pineapple improves this recipe greatly.

16. **Milk Punch.**—Put the thin rind of half a lemon into a quart of good milk in a double boiler and let it come to a boil. Beat together the yolks of 2 eggs and 4 ounces of sugar. Take the lemon rind from the milk, add the sugar and egg, also 8 tablespoonfuls of rum and 4 tablespoonfuls of whiskey. Whisk until the mixture froths, but do not let it boil again.

17. **Tom and Jerry.**—Beat 4 eggs until they are very light. Into each glass put 3 tablespoonfuls of the egg, 3 tablespoonfuls of whiskey and 2 teaspoonfuls of sugar; add a pinch of ground cloves, cinnamon and allspice and mix well. Fill the glasses up with boiling water and serve as soon as cool enough to drink.

18. **Grape Juice.**—Cover 8 quarts of picked grapes with 2 quarts of water and bring to a boil; strain same as jelly, then add 2 pounds sugar; let boil 8 or 10 minutes, then seal.

19. **Raspberry Vinegar.**—Pour 1 quart of wine vinegar over 2 quarts of red raspberries and let stand over night; strain through jelly bag on 2 quarts of fresh berries. Next morning repeat this, making in all 6 quarts of berries and 1 quart of wine vinegar. Then to each pint of liquid add $\frac{3}{4}$ pound of sugar and boil for 20 minutes. Bottle when cold. Proportion for beverage, 2 tablespoonfuls to 1 glass of water.

20. **Blackberry Wine.**—First measure the berries and bruise them; add 1 quart of boiling water to each gallon; let the mixture stand 24 hours, stirring occasionally; then strain off the liquor and put into a cask; to every gallon add 2 pounds of sugar; cork tight and let stand till the next October, when it will be ready for use. It may be bottled if desired.

21. **Christmas Temperance Punch.**—To 4 pounds of sugar and 2 quarts of water add the grated yellow rind of 4 lemons and 6 oranges. Stir until the sugar is dissolved and then boil for 10 minutes. Strain, and when cool add the juice of the oranges and lemons and two tart baked apples which have been passed through a sieve. When wanted, put a small piece of ice in the punch bowl, pour over the syrup, add a pint each of grape juice and ginger ale, and enough effervescing water to make it palatable.

22. **Farmer's Soda.**—Strain the juice of a lemon and put into a medium sized tumbler; after adding a tablespoonful of powdered sugar, fill the tumbler $\frac{2}{3}$ full of cold water; stir until the sugar is dissolved, then add a teaspoonful of soda, stir and drink while effervescing.

23. **Welsh Nectar.**—To a gallon of water add 2 pounds of loaf sugar and the grated rind of 3 lemons; boil for 10 minutes and when cold, strain. Put into bottles each containing 24 raisins, seeded and chopped fine. Cork and set in a cool place, shaking every day for three or four days. This will keep for a week or two if well corked and in a cool place.

24. **Grape Granito.**—To a pint of water add a pound of sugar and boil for 5 minutes. When taken from the stove add the juice of 1 orange and 1 lemon. Add a pint bottle of grape juice when it is cool and chill with ice.

25. **Cherry Shrub.**—Take a quart of very ripe stoned cherries and mash through a colander; add these to a quart of water and a pound of sugar which have been boiled for 5 minutes; also add the juice of a lemon; strain and set aside until cold. Partly freeze or serve with shaved ice.

26. **Various Fruit Waters.**—Nearly all kinds of fruit waters are made after the same recipe. Mash the fruit and add enough water and sugar to make of the right flavor and consistency. For instance, to make currant water mash a pound of ripe currants and add $\frac{1}{4}$ pound of raspberries if you have them; strain the juice through a sieve and add a pound of granulated sugar and set aside. When ready to serve add enough water to make it palatable.

27. **Cottage Beer.**—Put a peck of good wheat bran and 3 handfuls of hops into 10 gallons of water and boil together until the bran and hops sink to the bottom. Then strain it through a thin cloth into a cooler and add 2 quarts of molasses when it is about lukewarm. As soon as the molasses is dissolved, pour the mixture into a ten-gallon cask and add 2 tablespoonfuls of yeast. When fermentation is over with, cork up the cask and it will be ready for use in four or five days.

28. **Ginger Beer.**—Add 6 ounces of bruised ginger to 3 quarts of water and boil for 30 minutes; add 5 pounds of loaf sugar, $\frac{1}{4}$ pound of honey, a gill of lemon juice and 17 quarts more of water; strain through a cloth and when it is cold add 2 drachms of essence of lemon and the whole of an egg. It may be bottled after it has stood for three or four days.

29. **Spruce Beer.**—Add 2 ounces of hops to $\frac{1}{2}$ gallon of water, boil for 30 minutes and strain; add 8 gallons of warm water, 1 gallon of molasses and 4 ounces of essence of spruce dissolved in 1 pint of water; put it in a clean cask, shake all well together and add $\frac{1}{4}$ pint of yeast; let stand and work for six or seven days, or less if the weather is warm. When drawn off, add 1 teaspoonful of molasses to each bottle.

CANNING, PRESERVING, AND JELLY MAKING.

"It is the bounty of nature that we live;
But a philosophy that we live well."

—*Seneca.*

Canning Table.

Kind of Fruit.	Time for Boiling Fruit, Minutes.	Quantity of Sugar Per Quart, Ounces.
Apricots	10	8
Apples, Crab	25	6 to 8
Apples, Sour	10	6
Blackberries	6	5 to 6
Cherries	5	6
Currants	6	8
Gooseberries	8	8
Grapes, Wild	10	8
Huckleberries	5	4
Peaches, in halves	8	4
Peaches, whole	15	4
Plums	10	4 to 8
Pineapple	15	4 to 6
Pears, Bartlet, in halves	20	4 to 6
Pears, small, sour, whole	30	8
Quinces	30	8 to 10
Rhubarb	10	8 to 10
Raspberries	6	4
Strawberries	8	6 to 8
Tomatoes	30	0

Remember that one level cupful of granulated sugar weighs about eight ounces.

CANNED FRUITS.

(All Kinds.)

When canning fruit see that the cans and elastics are perfect and that the tops fit properly. Put the cans and covers into a kettle of water and bring slowly to the boiling point. Dipping the elastics into the boiling water will be sufficient to sterilize them. Set the cans in a pan on the stove and fill to overflowing with the fruit which should be boiling hot. Put the top on quickly and screw it down tightly. As the fruit cools the tops should be screwed down again and again to keep tight. It is best to use glass cans. To test whether they are air tight turn them upside down as soon as they are filled. The juice will ooze out if they are not air tight. Each can should be wrapped with paper to exclude the light and then set in a dark place that is cool but dry. The cans should be examined two or three days after filling, and if syrup leaks out from the rim the fruit should be recooked and used for jam or jelly.

PRESERVES.

(All Kinds.)

Preserves must be made with the greatest care. As soon as pared, peaches, pears, apples and quinces should be placed in cold water to keep them from turning dark. Many fruits, such as pears, quinces, citrons, water-melon rinds, cherries, currants, etc., harden when put at first into a thick syrup. To prevent this they should be cooked first in water or thin syrup and the rest of the sugar added later. Apples, peaches, plums, tomatoes and strawberries are likely to become too soft in cooking. It is a good plan to pour the hot syrup over these fruits or to put the sugar over them and let them stand several hours. Either method extracts the juice and hardens the fruit.

Preserves should boil gently to avoid burning and to let the sugar penetrate the fruit. As a general rule, from three-fourths to a pound of either loaf or granulated sugar is used for each pound of fruit. Put sugar and water over the fire in a porcelain kettle. Beat lightly the white of an egg with two tablespoonfuls of water and add to the syrup just before it boils. As it begins to boil the scum should be carefully removed.

CANNING FRUITS, MAKING PRESERVES, JELLIES, ETC.

Simmer until the preserves are clear, then take out each piece with a skimmer and put at once into the jars. Stew the syrup until it "ropes" from the spoon, skimming off the scum which arises; then pour the syrup over the fruit in the jars and seal. When preserving apples or peaches it is an improvement to add a few slices of lemon or orange. To keep preserves from sugaring add a little tartaric when cooked.

MARMALADES.

Marmalades and fruit butters will require less boiling and will be smoother and better flavored if the fruit is well cooked and mashed before adding either sugar or vinegar. They should be stirred constantly with an apple butter stirrer.

JELLIES.

For jelly, select fruit that is not too ripe as it will jelly better and have a better flavor. It should be heated as the juice can then be better extracted. Jelly should be strained twice and will be much lighter if allowed to hang and drip over night. Heat the juice, then add the sugar which should first be heated in the oven. Jelly should be boiled rapidly in a pan with a large bottom. It should not stop boiling till done, which usually requires fifteen or twenty minutes. If a little gelatine be added it will not need to be cooked so long and will be of a lighter color. After the glasses are filled they should be set in the sun till cold, then a piece of writing paper should be placed directly on the jelly and another piece fastened over the glass with a rubber band. Moulding may be prevented by putting a teaspoonful of sugar on top of the jelly in the glass.

1. **Grape Marmalade.**—Two pounds seeded raisins, 3 cups granulated sugar, 1 pound English walnut meats; remove seeds and skins of grapes; cook 20 minutes.

2. **Quince Honey.**—One quart of quinces grated fine, 1 quart of sugar, 1 pint of water. Boil about 20 minutes after it comes to a boil.

3. **Orange Marmalade.**—This is much more satisfactory if made in small quantities. Take 3 oranges and 1 lemon; slice very thin, not using the ends. Place in a bowl and pour over it 3 pints of cold water; let stand for 24 hours. Then boil in a porcelain kettle until very tender and let stand for another 24 hours. Then to every cup of fruit and liquid add a cup of sugar and boil briskly for about an hour. Try, and the minute it jellies remove from the fire and fill hot dry glasses. Let stand two days before sealing.

4. **Quince Honey.**—Grate one large quince, add 2 cups of sugar and $\frac{1}{2}$ cup of water. Boil 20 minutes.

5. **Cooking Apricots.**—Boil apricots for 5 minutes in water to which $\frac{1}{2}$ teaspoonful of soda has been added and you will be surprised at the small amount of sugar it takes to sweeten them when cooking.

6. **Canned Corn.**—Add 1 cup of salt to 1 gallon of corn cut off the ears; mix well together and pack in jars and steam 3 hours. Screw the lids on the Mason jars tight before steaming.

7. **Canned Elderberries (Excellent).**—Add $2\frac{1}{2}$ pounds of sugar and 1 pint of pure cider vinegar to 7 pounds of elderberries; boil 1 hour. Then seal in jars. This will fill four jars and is excellent for pies.

8. **Canned Beans.**—Pack the beans in tight jars after stringing and breaking in small pieces. Put a teaspoonful of salt on the tops, and cover them with cold water. Seal jars tight. Place the jars in a boiler of cold water and let boil from 3 to 4 hours.

9. **Canned Rhubarb.**—Peel the rhubarb and cut into small pieces, pack in jars, fill with cold water, seal tight; when ready to use will not need as much sugar as when fresh.

10. **To Cook Cranberries.**—To 1 quart of cranberries add 1 teacup of water and put them over the fire. After cooking 10 minutes, add 2 heaping cups of sugar, and cook 10 minutes longer, stirring frequently. Pour them into a bowl or mold and when cold they may be removed as a jelly. If preferred, they may be strained through a sieve before putting in sugar.

11. **Preserved Cherries.**—Use rich, red cherries; stone and weigh them, adding $\frac{3}{4}$ pound of loaf sugar for each pound of fruit. Let the fruit, stoned and sweetened, stand in a stone jar over night; in the morning put them in the preserving kettle and cook until clear. Put in tumblers; cover the tops, when cool, with melted paraffine before putting on covers.

12. **Strawberry Preserves.**—Take equal parts by weight of sugar and fruit; the berries should be solid, used as soon as ready and not sugared down. Use just enough water to keep them from sticking and put berries, sugar and water all on at the same time and cook for 20 minutes. Then spread on flat dishes and set in sun for 3 or 4 days and then put in glass jars. They will need no more heating or cooking. These are considered fine.

13. **Pear Chips.**—Ten pounds of pears sliced thin, 7 pounds of sugar, 4 lemons boiled soft; press out the juice and pulp; chop the peel very fine. Boil the sugar and fruit together until soft; then add the lemon, $\frac{1}{2}$ pound green ginger root scraped and cut into bits. Let all boil slowly until quite thick. Can be put in jelly glasses and sealed with paper. Very fine.

14. **Gooseberry Conserves.**—Six quarts green gooseberries, 5 pounds granulated sugar, 2 pounds seedless raisins, 5 oranges. Remove the stems from

the berries, and chop the raisins rather coarsely. Cut the oranges into halves and take out the juice and pulp, removing the seeds; cook peel of three of them soft in enough boiling water to cover, changing water once or twice; drain; remove the white part from the peel by scraping with a spoon. Then cut into narrow strips; put sugar, berries, orange peel, juice and rind together in a kettle and heat slowly until the syrup is thick.

15. **Quince Honey.**—Take four pounds of granulated sugar and 1 pint of water and boil for 20 minutes. Constantly skim syrup until clear; grate $1\frac{1}{2}$ quince very fine; then pour into the syrup and let boil 10 minutes.

16. **Orange Marmalade.**—Cut the oranges in halves; take out the pulp with a spoon; take 1 lemon to 5 oranges, preparing the same way. Then cut the shell of the oranges in two, scrape out the white lining and put the skins on to boil; weigh the pulp, take half as much sugar and simmer together 15 minutes. When the skins are transparent and tender, take up and, putting several pieces together, cut it quickly into the narrowest possible strips. Mix these with pulp and sugar; cook until very thick. Put in glasses and when cold, seal.

17. **Lemon Marmalade.**—Take 6 lemons and slice them thin; remove only the seeds; add 3 pints of cold water to each pound of sliced fruit; let this stand for 24 hours, then boil until the chips are tender; pour into an earthen bowl and let stand until next day. Then weigh and, to every pound of pulp, add $1\frac{1}{2}$ pounds of sugar; boil until the syrup jellies and the chips are transparent.

18. **Lemon Butter.**—Juice and grated rind of 2 lemons, 2 cups of sugar, 2 eggs, small lump of butter; boil 10 minutes in a double boiler.

19. **Canned Elderberries.**—Add 4 pints of sugar and 3 pints of best cider vinegar to each peck of cleaned elderberries. Cook until well done and can.

20. **Tomato Preserves.**—Scald and peel carefully some small tomatoes (yellow preferred), add an equal weight of sugar and let stand over night; pour off all the juice and boil until it is a thick syrup; add tomatoes and boil until transparent. A piece of ginger root or 1 lemon, sliced thin, to a pound of fruit is a good addition. Excellent.

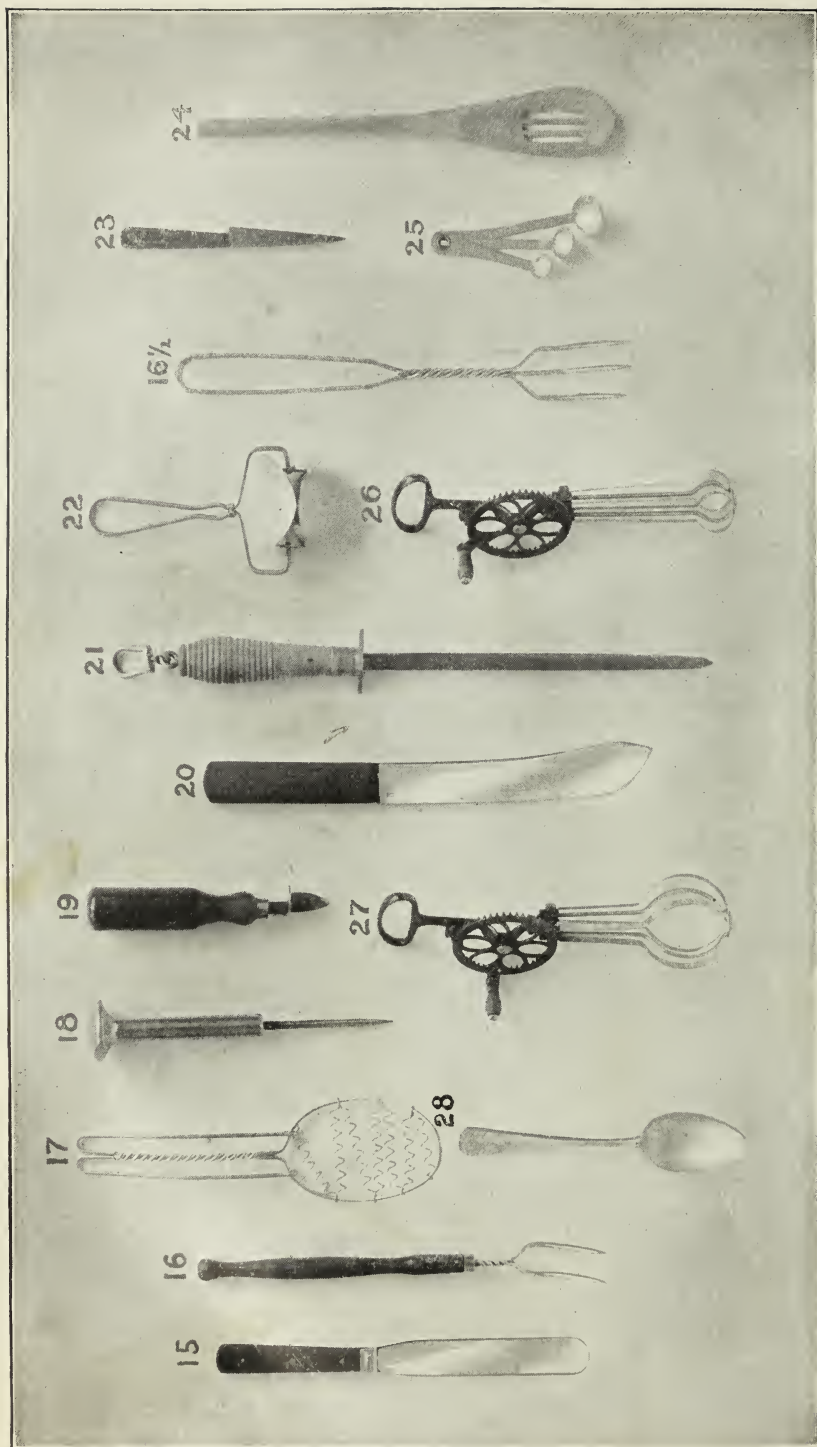
21. **Pieplant Jelly.**—Cut pieplant into small pieces, without peeling; cover with water; boil to a pulp; then strain through a flannel bag. Bring the juice to a boil and for each pint add a pint of sugar; boil for about 20 minutes or until it will jell.

22. **Orange Marmalade.**—One dozen navel oranges and 2 lemons; cut in small pieces, the smaller the better. Cover with 3 quarts of water and let stand 24 hours. Then measure the juice and allow 1 pound of sugar to 1 quart of juice and boil until tender or transparent.

23. **Canned Apple Sauce.**—Put apple sauce into hot jars and seal at once and it may be kept either for table use or for pies till apples are out of the market.

24. **Canned Pineapple.**—Pare the pineapples and carefully cut out all the eyes; chop them fine and weigh; add the same weight of sugar; put into a large crock, mix thoroughly and let stand 24 hours; fill the cans full and seal tight. In about two weeks look them over to see that none are spoiling. If they are, heat them again and refill cans.





(Photographed especially for this book.)

NO. 8. A FEW OF THE SMALLER NECESSARY KITCHEN UTENSILS.

15. Spatula.
16. and 16½. Meat forks.
17. Flat wire egg beater.
18. Ice pick.
19. Can opener.

20. Butcher knife.
21. Kitchen steel.
22. Cookie cutter.
23. Vegetable knife.
24. Skated wooden spoon for cake making.
25. Accurate measuring spoon—teaspoon, half and quarter.
26. Single egg beater.
27. Egg beater.
28. Tablespoon.

PICKLING.

Including Recipes for all Kinds of Pickles, Catsup, Chow Chow, Chili Sauce, Chowder, Piccalilli, Etc.

“Peter Piper picked a peck of pickled peppers.”

It is always best to use cider vinegar in making pickles as other kinds eat the pickles or make them soft. Vinegar which is too strong should be diluted with water. The vinegar should never be boiled but should be poured on the pickles hot as it comes to the first scald. If pickles are put into brine the brine should be strong enough to float an egg. A heaping pint of coarse salt should be used to each gallon of water. Never put pickles into anything that has previously held any kind of grease and never let them freeze. A good way is to put pickles in bottles and seal while hot. Put a slice or two of horseradish into the jar with pickles. It will soon sink to the bottom, taking the scum with it and leaving the vinegar clear.

1. **Beet Pickles.**—One quart of beets chopped fine, 1 quart of cabbage, 1 cup sugar, 1 teacup grated horseradish, 1 teaspoonful salt, 1 teaspoonful pepper. Mix all together and cover with cold vinegar; can in air tight cans and keep in dark place.

2. **Chopped Pickles.**—Two large heads of cabbage, 1 peck of green tomatoes, 3 green peppers, 1 small cup salt; chop, mix, let stand over night and drain. Cover with cider vinegar. Boil until soft; drain again and mix with 1 tablespoonful mustard, 1 tablespoonful cloves, 2 pounds of raisins, 2 pounds of sugar, $\frac{1}{2}$ cup grated horseradish, 3 chopped onions, celery and salt to taste. Hot vinegar enough to make moist. Can rather dry.

3. **Chow Chow.**—Two heads of cabbage, $\frac{1}{2}$ peck green tomatoes, 1 large ripe cucumber, 2 large onions, 9 large, red sweet peppers, 10 cents worth of white mustard seed, 10 cents worth of black mustard seed, 2 ounces celery seed, $\frac{1}{2}$ pint salt, 1 coffee cup grated horseradish. Mix cabbage, tomatoes and salt; let stand 4 hours in colander to drain; drain onions and cucumbers; scald $1\frac{1}{2}$ gallons of vinegar and 3 pounds brown sugar and pour over the mixture; heat thoroughly. This makes 10 quarts.

4. **Sliced Cucumbers.**—Peel and slice a gallon of cucumbers and soak over night in weak salt water. Drain and put them in weak vinegar on the stove and let them get hot; drain and pack them in glass jars. Take one quart of vinegar, a few slices of onions, sugar and spices to taste; let it come to a boil. Then, while hot, pour this over the cucumbers and seal.

5. **Dill Pickles.**—Fill a stone jar with alternate layers of grape leaves, fresh cucumbers, dill and salt. Cover with water and an inverted plate; place a brick on the plate to hold all under water. The cucumbers will be ready to use in about two weeks.

6. **Cucumber Pickles.**—Wash some cucumbers from 1 to 2 inches long; let them stand in moderately strong brine for 12 hours; remove from brine and place in a porcelain kettle; cover them with weak vinegar and let come to a boil. Pack in glass cans. In another vessel bring to the boiling point some strong cider vinegar with mixed spices and sugar, allowing $\frac{1}{2}$ cup of sugar to 1 quart can of pickles. Fill up can with hot spiced vinegar and seal at once.

7. **Green Tomato Pickles.**—Chop fine 8 pounds of green tomatoes; add 4 pounds of brown sugar and boil 3 hours; add 1 quart vinegar, 1 teaspoonful each of mace, cinnamon and cloves, and boil 15 minutes.

8. **Tomato Higdom.**—Mix $1\frac{1}{2}$ cups of salt with 1 bushel of green tomatoes chopped fine and let them stand over night. In the morning, after pressing hard to extract all juice, add 1 cup mustard, 3 pounds sugar, 12 red peppers chopped fine, $\frac{1}{2}$ cup celery seed. Mix thoroughly and pack in jars. Over this pour half a gallon of hot vinegar.

9. **Mustard Pickles.**—One quart large cucumbers, cut in pieces; 1 quart small cucumbers, 1 quart large tomatoes, 3 heads cauliflower, 2 quarts very small onions, 6 red and green peppers cut in strips. Put all in separate dishes of salt and water and let stand over night. In the morning drain off and cook in separate dishes of clear water until nearly tender. Then put together and boil a short time in the following paste: One ounce pulverized tumeric seed, $\frac{1}{2}$ pound ground mustard, 2 cups of flour, 7 cups sugar, 1 gallon vinegar.

10. **Pickled Peppers.**—Cut the stems and rind from the peppers. Then put into strong hot brine, repeating this for three mornings, and then drain off and cover with hot vinegar. When wanted, take out of brine and stuff with creamed sweetbreads and mushrooms and serve on lettuce leaves. A very pretty and appetizing luncheon dish.

11. **Sweet Pickled Peaches.**—Wash clean several pounds of peaches that are not too ripe; it is best to use clings and do not peel them. Put into a porcelain kettle 3 pounds of brown sugar, 1 pint of strong cider vinegar and a small handful each of cinnamon and cloves and bring to a boil. Put in as many peaches as the liquor will cover; cook until moderately soft and put into jars. Cook all alike and pour liquor over them.

12. **Sweet Pickled Prunes.**—Four pounds of prunes, 1 pint of vinegar, 2 pounds of sugar, 1 ounce each of cinnamon and cloves, and $\frac{1}{4}$ ounce of ginger. Boil the vinegar, spices and sugar together 10 minutes; after soaking the prunes for 2 or 3 hours and steaming them 10 or 15 minutes, pour the hot vinegar over them and boil all together until the prunes are tender. These will be found excellent.

13. **Gooseberry Catsup.**—To 1 pound of gooseberries use $\frac{3}{4}$ pound of sugar, spices to taste; 1 pint of vinegar to 10 pounds of fruit. Boil 2 hours.

14. **Celery Sauce.**—Two stalks (arrow-root) celery, 15 large ripe tomatoes, 2 red peppers, 2 onions, $1\frac{1}{2}$ cups vinegar, 2 spoonfuls salt, 8 table-spoonfuls sugar; chop all fine and boil $1\frac{1}{2}$ hours.

15. **Tomato Sauce.**—Melt 2 tablespoonfuls butter; add 2 tablespoonfuls flour and 1 pint strained tomatoes; also a small bay leaf, slice of onion, 1 teaspoonful salt, a dash of pepper, 2 cloves and a bit of mace; simmer 15 minutes; strain and serve.

16. **English Chow Chow.**—One quart of cabbage, 1 quart of green tomatoes, 1 quart of onions, 1 quart of cucumbers (pickle), 6 green peppers. Chop fine, put in weak salt water and scald until tender; strain and while hot pour paste, also hot, over the mixture.

Paste.—One cup of sugar, 1 cup of flour, 1 tablespoonful each of tumeric and celery seed, 6 tablespoonfuls of ground mustard, 2 quarts of pure cider vinegar. This makes one gallon.

17. **Tomato Ketchup.**—Twelve ripe tomatoes, 4 green peppers, 2 large onions, 2 tablespoonfuls salt, 4 cups vinegar, 2 tablespoonfuls ginger, 2 table-

spoonfuls brown and white sugar, 1 tablespoonful mustard, 1 tablespoonful cinnamon; boil all together 3 hours or until thick enough.

18. **Damson Plum Catsup.**—Put 2 quarts of ripe damson plums in a stone jar and cook them with good vinegar; let them stand for 3 or 4 days, then with the hands mash them up and put them through a sieve; have your kettle ready and to a pint of liquid add one pound of brown sugar and season to taste with allspice and cinnamon, beaten fine; let it boil $\frac{1}{2}$ hour; skim it while boiling. When cold, bottle and cork.

19. **Chowder (Very Fine).**—One peck green tomatoes, 1 dozen sweet peppers, 1 dozen onions, all chopped fine; sprinkle over 1 quart salt, let stand over night. In the morning drain off and cook one hour in 1 quart vinegar; drain again. Mix with 2 quarts vinegar, 1 bowl sugar, 1 teaspoonful each ground cinnamon, celery seed, ground mustard (or seed), and boil 15 minutes. If liked, one may add allspice, cloves and 1 pint grated horseradish.

20. **Corn Sauce.**—Three dozen corn, $\frac{1}{4}$ dozen red peppers, $\frac{1}{4}$ dozen green peppers, 1 cup salt, 3 pints cider vinegar, $1\frac{1}{2}$ pints sugar, 1 large or 2 small heads of cabbage, 2 tablespoonfuls tumeric powder. Slice corn from cob without boiling. Take seeds from peppers and chop fine. Slice cabbage fine. Mix all together and boil half an hour. Seal in glass jars.

21. **Pickled Cabbage.**—One gallon of finely cut cabbage, 2 green peppers cut fine, one pound sugar, $1\frac{1}{2}$ cups mustard seed, $1\frac{1}{2}$ spoonfuls of salt, 2 tablespoonfuls of celery seed, 1 cup grated horseradish, a small piece of alum. Pack in crock and cover with heavy muslin. Then cover with old cider vinegar. No cooking in this.

22. **Stuffed Peppers.**—Soak 3 dozen peppers in salt water over night, then make the filling. Take one head of cabbage and 2 bunches of celery and chop both fine; spices to taste, also some of the seeds of peppers; 1 quart of water, 2 quarts of vinegar, 1 pint of sugar; boil for 30 minutes. Pour over peppers while hot.

23. **Bordeaux Sauce.**—One gallon green tomatoes, 2 gallons chopped cabbage, 1 dozen onions, $1\frac{3}{4}$ pounds brown sugar, salt to taste, 1 dozen green and red peppers, celery seed and one bunch celery, allspice to taste, cloves, tumeric powder, mustard seed or 3 tablespoonfuls ground mustard; boil 20 minutes.

24. **Piccalilli.**—One gallon green tomatoes sliced, 6 good sized onions sliced, 1 pint granulated sugar, 1 quart pure cider vinegar, 1 tablespoonful salt, 2 tablespoonfuls mixed spices. Mix all together and stew until tender, stirring continually; put in fruit jars and seal.

25. **Euchered Crab Apples.**—Cook nice crab apples till tender; drain; pack in jars with a few whole cloves and pieces of cinnamon bark in each jar. Make a syrup of the proportion of 1 quart of good vinegar to 3 pints of sugar; boil the syrup 5 minutes; skim, then pour over fruit and seal. These are excellent.

26. **Small Cucumber Pickles.**—Soak over night 50 cucumbers in warm salt water containing a piece of alum the size of a hazelnut. Then drain off the water and wipe each pickle dry. Place in a jar. Take $\frac{1}{2}$ pint of water and 1 quart of cider vinegar and mix spices with whole horseradish root; let come to a boil, then pour over the pickles and seal.

27. **Spanish Pickle.**—One gallon of cabbage, 1 gallon of ripe cucumbers chopped fine, 7 pods of green pepper, 1 pint of salt; drain all together 24 hours. Then mix 1 gallon of vinegar, 1 ounce of white mustard seed, 1

ounce of black pepper, horseradish and celery seed to taste, 1 ounce of tumeric and 3 pounds of brown sugar; then add to this cucumbers, etc. and cook one hour.

28. **"Dandy" Home-Made Pickles.**—Make a brine of salt and water strong enough to float pickles. Leave the pickles in this over night; drain in morning. Make kettle of water slightly sour and add lump of alum size of hickory nut; put pickles in this till heated through but not cooked; then wipe on dry cloths and pack in quart jars; add to each jar $\frac{1}{2}$ teaspoonful whole mustard, 2 teaspoonfuls celery seed, a pinch of cayenne pepper, 2 teaspoonfuls sugar, 2 parts vinegar to 1 part water; heat, fill jars and seal.

29. **Spiced Peaches.**—Eight pounds of peaches, 4 pounds sugar, 1 ounce cloves, 1 ounce cinnamon, $\frac{1}{2}$ ounce mace, one pint vinegar; boil the juice three times; in the third, boil the fruit until soft; if there is too much juice to cover them, boil down until just enough.

30. **Canned Beets.**—Cook the beets until tender, slice and pack in jars, put sugar and salt to taste on top and then pour scalding vinegar over until jars are filled. Seal tight.

31. **Canned Cucumbers.**—Slice the desired number of peeled cucumbers; sprinkle a little salt over them; let stand for 30 minutes, then drain; do not squeeze; pack them in jars; pour cold vinegar over them and seal tight. When ready to use, season to taste with pepper and onions.

32. **String Bean Pickles.**—Wax beans are best for these pickles. Cut off the ends, string and steam over boiling salt water until they are easily pierced with a fork; drain on a cloth and when cold pack in a jar, putting a little red pepper between the layers. Make a spiced vinegar by adding 1 cup of sugar and a teaspoonful each of white mustard and celery seed to each pint of vinegar. When hot pour this over the beans, weight and let stand for 3 or 4 days in a cool place. Then drain, reheat the vinegar, cover the beans with horseradish leaves, pour on the hot vinegar or syrup, and let stand a week before using. These are fine.

33. **Mixed Pickles.**—Two quarts cucumbers, 1 quart onions, 1 quart green tomatoes, 3 green peppers, 1 large cauliflower; cut all in pieces and soak over night in salt and water. In the morning scald in the same brine and then make a dressing of 2 quarts vinegar, $1\frac{1}{2}$ cups sugar, 1 cup flour moistened with vinegar, 3 tablespoonfuls prepared mustard, 2 tablespoonfuls tumeric dissolved. Pour off the brine and put on the dressing and bring to a boil, then can and seal. Very fine.

34. **Sour Cucumber Pickles.**—One gallon vinegar, 2 ounces white ginger root, $\frac{1}{2}$ pound ground mustard, 2 ounces white mustard seed, 1 pound small onions, $\frac{1}{4}$ pound salt, 2 ounces whole black pepper, 2 ounces whole cloves, 2 ounces ground cinnamon. Put the salt and onions in 3 quarts of the vinegar, cold; tie the spices in a thin muslin bag and boil a few minutes in the remaining quart of vinegar; when cold, put all together; wash the cucumbers and drop them into this liquor as soon after gathering as possible.

35. **Chili Sauce.**—Two large ripe tomatoes, 3 onions chopped fine, 3 green peppers chopped fine; cook together until soft and put through the colander; then add 3 tablespoonfuls of salt, 1 cup sugar, 3 teaspoonfuls ground cinnamon, 2 teaspoonfuls ground ginger, 1 teaspoonful ground cloves, 2 cups good vinegar; cook until as thick as desired, then bottle and seal. Excellent.

36. **Cold Catsup.**—Peel and slice 1 peck ripe tomatoes, sprinkle lightly

with salt, let stand 2 hours and drain off the water; add 2 horseradish roots grated or put through the vegetable chopper, $\frac{1}{2}$ teacup fine salt, $\frac{1}{2}$ teacup white mustard seed, 1 teaspoonful black pepper, 2 red peppers chopped fine without seeds; if liked, 4 ounces of coarsely chopped celery; 1 tablespoon chopped onion, $\frac{1}{2}$ cup sugar, 1 teaspoonful ground cloves, 2 teaspoonfuls ground cinnamon, 3 pints of vinegar. Mix cold. Tie a cloth over but do not seal.

37. **Watermelon Pickles.**—Pare off the green and the red parts of watermelon rinds, saving only the white; cut in any desired shapes; place in a jar, alternating small quantities of rind with a little salt. Let stand for a day or two in a cool place, then thoroughly rinse; put on to boil with equal parts of vinegar and water and add a level teaspoonful of pulverized alum. Boil till you can pierce with a fork, then rinse again. For the syrup use one quart of vinegar to 3 pints of sugar and whole cloves, allspice and cinnamon in a small bag. Boil down to suit your taste. Just before taking off, put the rinds in and boil a little longer. Can and seal.

38. **Cucumber Pickles.**—Wash the cucumbers and put into glass cans. For one quart can add a dessert spoonful of salt and fill with vinegar. Can freshen and put into clear vinegar when used.

39. **Sweet Pickles, Pears, Peaches and Apples.**—Seven and one-half pounds of fruit, $3\frac{1}{2}$ pounds sugar, 1 pint vinegar, whole cloves and stick cinnamon as preferred. Boil sugar, vinegar and spices and add fruit. Boil until easily pierced with fork. Remove fruit and put into cans or jars. Boil down the syrup and pour over the fruit.

40. **Corn Salad.**—Twenty ears of corn, 1 cabbage, 2 green peppers, 4 good sized onions, 4 cups vinegar, 2 cups sugar, 1 teaspoonful tumeric powder, 2 tablespoonfuls mustard; cut corn from ears; chop fine the cabbage, peppers, and onions together and cook slowly for a few minutes. Can while boiling hot.

41. **Mexican Chili Sauce.**—Stew long red peppers until soft in sufficient water to cover. Scrape red pulp from inside of skin; reject skin and seeds. Make a dressing of flour with ham or bacon grease, hot water and salt; add chili; serve with meat.

42. **Pickled String Beans.**—String the beans and cut them into inch lengths. Let them stand in strong brine 8 days, changing it 3 times. Drain and lay in clear cold water for 1 day, then dry between the folds of a towel. Pack in glass jars with scalding vinegar which has been brought to a boil with a minced onion, a dozen whole cloves, a heaping tablespoonful of mustard seed and 4 blades of mace. Screw on the tops and do not use for a month or six weeks.

43. **Pickled Peaches (that will keep).**—Four pounds of sugar and one pint of vinegar to 12 pounds of fruit. Put sugar and vinegar together and boil, then add the fruit and let it come to a boil. Next day drain off the liquor and boil again. Do this 3 times and your pickles are delicious. Add cinnamon to the liquor and stick 2 or 3 cloves into each peach.

44. **Cucumber Catsup.**—One-half bushel full-grown cucumbers; peel and chop them, sprinkle with salt, put in sieve and let stand over night; add 2 dozen onions cut up small, $\frac{1}{2}$ pound white mustard seed, $\frac{1}{2}$ pound black mustard seed, 2 dozen black peppers, ground. Mix well with best cider vinegar, making it the consistency of thick catsup and fill jars, tying up closely. No cooking required.

45. **Tomato Catsup.**—One bushel good ripe tomatoes, $\frac{1}{2}$ gallon cider vinegar, $\frac{1}{4}$ pound allspice, 2 ounces cloves, 3 tablespoonfuls black pepper, 6 large onions or 2 heads of garlic, 1 pint salt, 4 large red peppers; cook thoroughly and strain through sieve, then boil till it is thick enough and add vinegar.

46. **Chili Sauce.**—One-half bushel tomatoes, $\frac{1}{4}$ peck onions, 4 tablespoonfuls salt, 2 tablespoonfuls each of cloves, cinnamon and allspice, 3 tablespoonfuls black pepper, 3 cups sugar, 1 gallon vinegar; chop onions fine, mix everything together and boil constantly one hour and 15 minutes. Dandy good just as it is.

PRESERVING MEATS.

Including Curing, Smoking and Pickling Meats; Making Corned Beef, Sausage and Mince Meat and Preserving Eggs.

“There’s no want of meats, sir,
Portly and curious viands are prepared
To please all kinds of appetite.”
—*Messenger.*

1. **Corned Beef.**—For 100 pounds of beef take 7 pounds of salt, 1 pound of sugar, 1 ounce of saltpeter and 4 gallons of water; dissolve the saltpeter in a little hot water and add it and the salt and sugar to the water; scald the crock, pack the beef, sprinkle on a little salt and then pour on the brine and be sure to keep well weighted so that every particle is kept under the brine.

2. **Dried Beef.**—Brown salt like coffee and while hot roll each piece of beef in it thoroughly; pack in a crock and let it remain five days; take out, wash well and hang up to dry.

3. **Curing Hams.**—To each gallon of water add $1\frac{1}{2}$ pounds of salt, $\frac{1}{2}$ pound of sugar and $\frac{1}{8}$ ounce of saltpeter; dissolve saltpeter in a little hot water and mix all together; rub the hams with salt, pack in a well scalded crock, pour on the brine and be sure to weight well and keep all under brine.

4. **Curing Hams.**—When thoroughly cold after killing, trim them nice and smooth; pack them in salt and let them remain five or six weeks, then dip into boiling brine; rub the flesh side with pulverized black pepper as long as it will stick. Hang in dry place.

5. **To Keep Smoked Hams.**—Rub the flesh part with molasses and sprinkle on all the black pepper that will stick. Hang where they will keep dry.

6. **Pickle for Beef or Ham.**—For each hundred pounds of beef or ham use 9 pounds of salt, 4 ounces of saltpeter, 2 ounces of saleratus and 2 quarts of molasses; add water to make enough brine to cover meat. Scald brine, skim and let cool before pouring on meat.

7. **To Preserve Sausages.**—Roll into small thin cakes and fry until well done; then pack closely in jars and pour melted lard over them till the top is covered an inch deep. Set in a cool place and you will have nice sausage all summer.

8. **Curing and Smoking Hams.**—Hang the hams up for a week or ten

days. If kept perfectly sweet, the longer they hang the more tender they will be. For each good sized ham mix 1 teacup of salt, 1 ounce of saltpeter, and 1 tablespoonful of molasses. Put the hams in a tub; heat the mixture and rub well into the hams; repeat this until the mixture is all used; then let them lie two or three days. Then put them for three weeks into brine that is strong enough to float an egg; take from brine, soak in cold water for eight hours and hang up for a week or longer; smoke from three to five days but be careful not to heat the hams. Apple tree wood and corn cobs are good for smoking. Smoke the hams with the hock down. Tie the hams in bags until wanted for use.

9. **Sausage.**—To 10 pounds of chopped meat add 4 ounces of salt, 1 ounce of pepper, $\frac{1}{2}$ ounce of powdered sage and $\frac{1}{2}$ tablespoonful of ginger. When cool, pack in pans, cover thick with lard and then with paper. Keep in a dry, cool place. Each time after taking some out for use, press the paper back again.

10. **Mock Sausage.**—Soak some dry bread in water and mix with it the same quantity of finely chopped cold meat. Season with pepper, salt and sage; make into small cakes and fry.

11. **Head Cheese.**—Take the heads, feet, tongues and other convenient pieces of fresh pork; remove the skin; boil until all is tender and can be easily stripped from the bones. Then chop very fine and season with pepper and salt, and ground cloves if you like, or sage leaves may be rubbed to a powder and added. Mix well with the hand. Put into deep pans with straight sides and press it down hard with a plate that fits the pan. Put the under side of the plate next the meat and place a heavy weight on it. In two or three days turn it out of the pan and cut into thin slices. Use vinegar and mustard over it.

12. **Bologna Sausage.**—Chop fine 10 pounds of beef and $2\frac{1}{2}$ pounds of pork and thoroughly mix with it $\frac{1}{4}$ ounce of powdered mace, $\frac{1}{4}$ ounce of powdered cloves, $2\frac{1}{2}$ ounces of powdered black pepper and salt to taste. Let stand 12 hours and stuff in muslin bags that are 4 inches wide and 10 inches long. Lay them in ham pickle for five days and then smoke them for eight days. Hang in a dark place.

13. **Scrapple.**—Take a hog's jowl, the feet and part of the liver and heart; cleanse, put into cold water and cook until the bones may be easily removed. Chop fine and season with pepper, salt and sage. Strain the liquor on the stove and again add the meat. Thicken with corn meal and a teacupful of buckwheat flour till it is as thick as mush. Dip out into deep dishes and when it is cool it may be sliced and fried like mush. By pouring hot lard over it you can keep it all winter. It is very nice for breakfast on a cold morning.

14. **Cracknels.**—This is what is left from frying out lard. Put them into a pan with a little warm water and some bread crumbs or cold corn bread broken fine. Add pepper and salt. Fry a nice brown and serve hot.

15. **Pig's Feet Souse.**—After scraping, cleaning, washing and singeing the feet, put them into a kettle with plenty of water. Boil and skim, then pour off the water and add fresh and boil until the bones may be pulled out easily; do not bone, but pack in a stone jar with salt and pepper between each layer; cover with cider vinegar. When wanted for use, put in a hot skillet and add more pepper, salt and vinegar if needed. Boil until thoroughly heated, stir in a smooth thickening of flour and water, and boil until the

flour is cooked. Serve hot as a breakfast dish. Or, when they have boiled until tender, take out the bones and pack in a jar as above. Slice cold when wanted.

16. **Mince Meat (that will keep).**—Two pounds of lean beef boiled, when cold chop fine; 1 pound of suet minced to a powder, 2 pounds of sultanas or seedless raisins, 5 pounds of juicy apples pared and chopped, 2 pounds of currants, $\frac{1}{2}$ pound of citron chopped, 2 tablespoonfuls of mace, 3 tablespoonfuls of cinnamon, 1 tablespoonful of allspice, 1 grated nutmeg, 1 tablespoonful of fine salt, 3 pounds of brown sugar, 2 quarts of sweet cider. This mince meat will keep all winter.

17. **Pressed Beef.**—Take the desired amount of the cheaper pieces of beef and let there be a little fat so that it will be "marbled" when pressed. Lay in weak brine over night, then rinse and boil until very tender or until it will fall apart easily. Water may be added at any time, but only enough should be used to keep it from burning. Keep closely covered so as to retain the flavor. Remove the meat from the liquor and chop fine. Skim all the grease from the liquor and add to the liquor a tablespoonful of gelatine for each five pounds of beef. Boil the liquor down until the gelatine is dissolved and the liquor is like jelly. Mix it, with a little salt and spices to suit, in the chopped beef; pack in jars; cover with a plate and weight down. It will keep several months in winter. It should be sliced when wanted for use. When using, keep it covered with cloth wet with salt water. Garnish with sliced lemon.

18. **Preserving Eggs.**—Pour three pails of water over four quarts of unslacked lime and when it is cold add one-half pound of salt and one ounce of cream of tartar. Eggs covered with this liquid will keep a long time.

"WHAT TO DO" AND "HOW TO DO IT."

Including Various Recipes of All Kinds.

"We have gathered a posie of other men's flowers
And nothing but the thread which binds them is ours."

1. **Blacksmith's Borax for Welding.**—One ounce of salt, one ounce salt-peter, two ounces copperas, four pounds of sand; mix.

2. **Washing Fluid.**—One ounce of salts of tartar, one ounce of carbonate ammonia, one box Babbit's lye, one gallon of soft water. Use one-half teacup to a washing.

3. **Furniture Dressing.**—Use equal parts of alcohol and raw linseed oil. First remove all greasy substances, then apply with a soft woolen cloth.

4. **Washing Fluid.**—One box of lye and five cents worth of borax, salts of tartar and dry ammonia. Dissolve in two gallons of hot water. Take off fire before putting in ammonia. To be used in boiling suds.

5. **To Clean Carpets.**—One cake ivory soap, one bottle ammonia, five cents worth of ether; dissolve soap in one gallon of hot water; when cool, add ammonia and ether. Scrub small space at a time with a brush and wipe dry with a soft cloth wrung out of warm water.

6. **Wall Paper Cleaner.**—One-half cup water, one cup flour, three tea-

spoonfuls vinegar, three teaspoonfuls ammonia, one teaspoonful carbon oil. Boil and stir constantly until thick; work in small balls, and rub paper with downward strokes. Will not streak or spot if made as directed. Fine.

7. **Carpet Cleaner.**—Two bars ivory soap, four ounces soda, four ounces borax; dissolve the soap in a quart of water; add five gallons of water and, when ready to use it, add four ounces of sulphuric ether; use while hot with scrubbing brush. You do not need to use any cloth or clean water.

8. **Carpet Cleaner.**—Use five cents worth of salts of tartar to one bar of white wool or ivory soap; add this to three gallons of water. Shave the soap up fine and let it boil. Apply with brush and dry with dry cloth. This is fine.

9. **To Destroy Odor of Burning Lamp Wicks.**—Boil new lamp wicks in vinegar and then thoroughly dry them. There will then be no odor from them when burning.

10. **To Remove Paint Stains from Cotton and Wool.**—Old dry paint stains may be removed from cotton and woolen goods by first covering the spots with olive oil or butter and then applying chloroform.

11. **To Preserve Eggs.**—One quart of salt, one pint of slacked lime and three gallons of water. This liquid will keep eggs for years.

12. **Ink Spots.**—Oxalic acid will remove ink spots from books without injuring the print.

13. **Rust.**—Iron rust may be removed with kerosene oil.

14. **To Purify Cistern Water.**—Cistern water may be purified by hanging a bag of charcoal in the water.

15. **A Tight Shoe.**—Wring a cloth out of hot water and apply to the part that is tight. If necessary renew and keep shoe on until the leather is stretched.

16. **Cleaning Plates Before Washing.**—Tack a bag on the inside of the kitchen sink door and in it keep cloths to be used in cleaning plates, etc. before dishwashing. Dip the cloth in water, rub on a little soap, then wipe, instead of scrape, the dishes. A great help in kitchen work.

17. **To Clean Linoleum or Oil Cloth.**—Instead of using soap and water, wash with sweet milk. The milk makes it look fresh and bright without destroying the luster.

18. **To Clean Mud from Clothing.**—Use a corn-cob to rub the mud from the clothing, then brush well.

19. **To Kill Insects, Such as Bed Bugs, Moths, Etc.**—Hot alum water is the best thing known to destroy insects. Boil alum in water until it is dissolved; then apply the hot solution with a brush to closets, bedsteads, cracks, or wherever insects are found. All creeping insects may be destroyed by its use. There is no danger of poisoning and its persistent use will rid you of the pests.

20. **To Remove the Smell of Onions from the Breath.**—Parsley, eaten with vinegar, will destroy the unpleasant breath caused by eating onions.

21. **To Clean and Keep Oil Cloth Nice.**—Wash in clean, warm, soft water in which has been dissolved a large spoonful of borax. If hard water is used, more borax will be needed.

22. **To Mend Iron Vessels.**—Mix finely some sifted lime with the white of an egg till a thin paste is formed, then add some iron filings. Apply this to the fracture and the vessel will be found nearly as sound as ever.

23. **To Clean Lamp Chimneys.**—Hold chimney over the steam coming from a boiling kettle, then wipe it inside and outside with a soft muslin cloth.

24. **An Excellent Furniture Polish.**—Use equal parts of vinegar, turpentine and sweet oil. The bottle should be well shaken each time before using. Wet a cloth and rub well over the furniture, then wipe with a soft dry cloth.

25. **To Remove Tan.**—Wash with a solution of lemon juice and carbonate of soda; follow with the juice of unripe grapes if they may be had; if not, with "Fuller's Earth Water."

26. **To Remove Wrinkles.**—Melt and stir together one ounce of white wax, two ounces of strained honey and two ounces of the juice of lily bulbs; apply to the face every night and it is said your wrinkles will disappear.

27. **To Remove Coffee Stains.**—The yolk of an egg mixed with a little water will remove coffee stains. Glycerine will do the same. Rub out before washing.

28. **To Remove Ink from Linen.**—Dip the stained parts in pure melted tallow, then wash in water.

29. **To Remove Grease from Woolen Goods.**—Do not put either hot or cold water upon woolens that have had grease spilled upon them. Sprinkle the parts with either buckwheat or rye flour and let it absorb the grease; then brush off the flour and apply more, so continuing until all the grease has been absorbed. Cornstarch is equally effective when used upon cloth in the same manner.

30. **To Exterminate Roaches.**—With a machine oil-can squirt kerosene oil into cracks and seams behind woodwork, then sprinkle powdered borax over the shelves and blow it into the cracks with a powder blower.

31. **To Keep Steel Knives from Rusting.**—Dip the knives in a strong solution of soda, four parts of soda to one of water; then wipe dry, roll in flannel and keep in a dry place.

32. **Washing Blankets.**—When washing blankets make a lather of boiled soap and warm water and for each pailful and a half of water allow a teaspoonful of household ammonia. Wash in two or three waters, put through the wringer and hang out to dry. Choose a fine windy day so the blankets will dry quickly.

33. **To Exterminate Bed Bugs.**—Use kerosene oil freely wherever the bugs are found.

34. **Cement for Glass and Iron.**—Alum melted in an iron spoon over the fire makes a good cement for joining glass and iron. It is useful for cementing the glass part of a lamp to its metal base and stopping cracks about the base, as paraffine will not penetrate it.

35. **To Dry Boots.**—Fill wet boots with dry oats and set aside for a few hours. The oats will draw the moisture from the boots and, swelling out, will keep the leather from shrinking and hardening as it would do if placed near the fire to dry.

36. **To Remove Kerosene.**—Cover the spot with cornmeal; lay a paper over it and rub with a moderately heated iron. Two or three applications will remove the kerosene. Finely powdered chalk may be used instead of the cornmeal if desired.

37. **To Remove Fruit Stains.**—Fruit stains may be removed from table linen by pouring boiling water through the cloth where it is stained.

38. **Furniture Polish.**—A fine furniture polish may be made by taking equal parts of vinegar and salad oil. Apply sparingly with a flannel and polish off thoroughly with clean cloths. Don't forget to mix lots of “elbow grease” with this.

39. **To Clean Glass.**—Dampen a cloth with either alcohol or ammonia, then dip it into some finely sifted wood ashes and polish the glass. Wipe off with a perfectly dry cloth.

40. **To Clean a Glass Decanter.**—Put into it a spoonful of vinegar and a few lumps of soda. Shake it well but leave the top open or it may burst the decanter. Rinse with cold water.

41. **To Remove Panes of Glass.**—Lay soft soap over the putty for a few hours and it will become soft so that it may be easily scraped away no matter how hard it may previously have been.

42. **To Clean Light Gloves.**—Light gloves may be cleaned by rubbing them with fine bread crumbs. It is best to rub them after each wearing so that they do not become badly soiled.

43. **To Clean Kid Gloves.**—If not too badly soiled, kid gloves may be cleaned by rubbing them with a piece of oiled silk wound about the finger.

44. **Gnats.**—Camphor is the best preventive and cure for the stings of gnats.

45. **To Remove Grass Stains.**—Rub the stains with spirits of wine and they will readily come out when washed in soap and water.

46. **To Remove Grease.**—Take equal parts of benzine, ether and alcohol; wet a sponge in the mixture and apply by patting the spot; put a piece of blotting paper on each side and iron with a hot flatiron.

47. **To Remove Grease from Floor.**—Soda and hot water will remove grease from the floor.

48. **To Remove Ink Stains.**—If ink is spilled upon a carpet, tablecloth or dress it is best to take up as much of the ink as possible with blotting paper, or salt is also good to absorb it. Then wash the parts thoroughly with milk several times until all the ink is removed. It is then well to wash out the parts with ammonia water to remove grease. If the spots are dry, rub a piece of lemon on some salt and then upon the stain. Oxalic acid and salts of lemon are both good also.

49. **To Clean Lamp Chimneys.**—Rub them with a piece of newspaper upon which a little kerosene has been poured. This is better than soap and the chimney will not be so likely to crack.

50. **To Wash Flannels.**—Put borax in the water and the flannels will look like new and will not shrink.

51. **Ironing.**—A little table salt added to the starch helps in the ironing.

52. **To Prevent Scorching when Ironing.**—Rub the iron on a cloth saturated with kerosene.

53. **To Remove Stains from Clothing.**—Rub the stained parts with lard before washing. With washable goods, the yolk of an egg rubbed upon the stains before laundering will remove the spots.

54. **To Wash Black Stockings.**—Black stockings will retain their color if washed in warm suds of water and soap, with a little vinegar in the rinse.

55. **To Polish Patent Leather.**—Orange juice will be found to be a good polish for patent leather.

56. **To Remove Old Paint and Varnish.**—A mixture of two parts of

ammonia and one part turpentine will soften old paint and varnish so that they may easily be scraped off.

57. **To Wash Painted Surfaces.**—Wash painted surfaces with milk.

58. **Piano Polish.**—Rub well with a piece of flannel cloth saturated with a mixture of equal parts of turpentine, linseed oil and vinegar. Polish with a piece of chamois skin. This treatment will entirely remove the dingy appearance from fine woods.

59. **To Loosen Screws.**—Hold a red hot poker on the head of a rusty screw for two or three minutes and it may be easily removed with a screw driver.

60. **To Clean Blackened Silver.**—Add a teaspoonful of ammonia to a cup of water and use a little of this to make a paste with whiting. Apply the paste to the silverware with a soft chamois and polish it, using another chamois to dry it.

61. **To Remove Soot.**—Should soot fall upon the carpet cover it with dry salt and it may be swept up without leaving smears.

62. **To Remove Tea Stains.**—Tea stains may be removed by washing the fabric with milk. After the milk has dried the grease may be removed with benzine or naphtha.

63. **To Frost Window Panes.**—Dissolve some epsom salts in beer and apply with a brush and you will have the best window frosting known.

64. **To Dry Woolens Without Shrinking.**—A large manufacturer of woolen goods says that woolen garments should be hung on the line dripping wet and not wrung out at all. If dried in this way the shrinkage will be almost unnoticeable.

65. **Moths.**—Moths will not lay their eggs where fine-cut tobacco has been scattered.

66. **Moths.**—Sprinkle furs and woolens and the drawers and boxes in which they are kept with spirits of turpentine and the moths will not bother them.

67. **Moths.**—Camphor gum is a preventive of moths. Goods packed in a cedar chest will be kept free from moths. Exposing clothes and furs occasionally to the light and air and beating and shaking them is probably the best treatment, however.

68. **To Keep Away Mice.**—Mice do not like the smell of camphor gum and if it is placed in drawers or trunks they will keep at a distance. Seeds may also be protected by mixing small pieces of camphor gum with them.

69. **To Drive Rats Away Without Killing.**—Put plenty of pulverized potash in their holes and places they frequent and they will leave the premises.

70. **To Drive Rats Away.**—Put some copperas in whitewash and paint the places they visit. Also scatter the crystals of copperas in their holes and runways and over the floors and the rats will look for another home.

71. **To Drive Away Rats.**—Scatter either sulphur or sage about the places they frequent and you will get rid of the troublesome pests.

72. **A Preventive for Red Ants.**—Pour a quart of boiling water over half a pint of tar in an earthen vessel and set the vessel in the closet and you will not be troubled with red ants.

73. **To Get Rid of Flies.**—It is said that you will not be troubled with many flies if you keep geraniums growing in the house. Then why not have more flowers and fewer flies?

74. **To Prevent Bites from Mosquitoes and Flies.**—Mix three ounces of

sweet oil and one ounce of carbolic acid and when mosquitoes are troublesome apply to the face and hands every half hour. After it has been used two or three days and the skin is saturated it may be used less frequently. Be careful not to get it in the eyes. It is very effective and not harmful to the skin.

75. Mosquitoes and Flies.—Apply to the face and hands a mixture of six parts of sweet oil, one part pennyroyal and one part creosote and you will prevent bites of mosquitoes and flies. Do not allow it to get in the eyes.

76. To Clean Jewelry.—Wash the jewelry in soap suds, rinse it well in diluted alcohol and lay it in sawdust to dry. Fine for gold chains and all kinds of ornaments.

77. To Clean Silver.—Rub the silver with alcohol and ammonia, then polish with a little whiting on a soft cloth. Even frosted silver may be made clear and bright with this treatment.

78. To Purify Water.—A large spoonful of pulverized alum will purify a hogshhead of water. It should be thoroughly stirred in and it will be very effective in killing microbes.

79. To Make Hard Water Soft.—Fill the boiler with hard water and set on the stove. Then put half a cup of wood ashes into a woolen bag covered with cotton cloth to prevent the sifting out of the ashes and hang the bag in the water until the water is warm.

80. To Clean Tinware.—Take the fine, soft coal ashes which collect in the pipe and under the pan; mix these with soft soap and scour with a flannel cloth. Afterwards polish with a clean flannel.

81. Gem Washing Fluid.—Put three quarts of rain water over the fire and add one pound of salsoda, one ounce salts of tartar and one ounce of borax. After it is taken from the stove and is cold add one ounce of ammonia. Put one cup of this into the boiler when boiling clothes.

82. Hard Soap.—Put seven pounds of tallow, three pounds of rosin and two pounds of potash into six gallons of water and boil for from three to five hours; pour into a wash tub and let it stand over night. In the morning cut it into bars and lay in the sun for two or three days to harden.

This will last an ordinary family a year and save many a quarter that is spent for soap.

83. Soft Soap.—To six gallons of soft water add three pounds of best hard soap (finely cut), one pound of salsoda and four tablespoonfuls of harts-horn; boil until it is entirely dissolved; pour into convenient vessels and when cold it will be ready for use. This makes fifty pounds of fine soft soap.

84. To Remove Scorches from Cloth.—Spread over the scorched places a mixture of the juice of two onions, two ounces Fuller's earth and one-half pint of vinegar. These ingredients should be mixed, thoroughly boiled and cooked before using.

85. To Remove Stains Caused by Scorching.—Often all that is required to whiten scorched linen is to wet it with soap suds and lay it in the hot sun. Another method is to boil the linen in a gallon of milk in which is dissolved a pound of white soap.

86. To Remove Mildew.—Dip the article in sour buttermilk, lay it in the sun to whiten and wash in clean water. Another method is to apply a mixture of soap, starch, salt and the juice of a lemon. Use half as much salt as starch.

87. To Remove Linen Stains.—Rub the stains with soft soap, apply a

starch paste, dry in the sun and wash out in cold water. Repeat several times if necessary.

88. **To Clean Gilt Frames.**—Take chloride of plaster or soda, one ounce; white of eggs, two ounces; mix thoroughly and apply with a soft brush after blowing the dust from the frames.

89. **To Keep Butter for Winter Use.**—Into six pounds of fresh butter work a large spoonful of salt and a tablespoonful each of saltpeter and powdered white sugar. Pack in a crock that is perfectly clean and cover with salt.

90. **To Prevent Rust.**—Melt together one part of rosin and three parts of lard and apply a thin coating to stoves, grates, plows, etc. It is equally good when used on brass, steel, copper and other metals. This also makes a good water-proof application for boots and shoes.

91. **Cement for Wood, Ivory, Stone, Porcelain, Leather, Silk, Woolen or Cotton.**—Melt together in an iron vessel one part, by weight, of gutta percha and two parts of common pitch and you will have one of the best cements made. It is not affected by water and is thus especially valuable for certain purposes.

92. **Cement for Rubber or Leather.**—Dissolve two ounces of gutta percha in a pound of chloroform. Thoroughly clean the parts that are to be cemented, cover each part with the mixture and let them dry for nearly half an hour, then warm each part in a candle flame and press firmly together until dry.

93. **Diamond Cement.**—Dissolve thirteen ounces of white glue in a pint and a half of soft water, then stir in three ounces of white lead and boil until it is thoroughly mixed; remove from the stove and when cool add half a pint of alcohol; bottle at once and keep tightly corked.

94. **Weights and Measures.**—

One pound of soft butter is equal to a pint.

Ten eggs are equal to a pound.

A pound of brown or white sugar, powdered or loaf sugar, broken, equals a pint.

A pound and two ounces of either wheat flour or corn meal is equal to a quart.

Eight large tablespoonfuls are equal to a gill.

Thirty-two large tablespoonfuls equal a pint.

A common sized wine-glass holds four tablespoonfuls, or half a gill.

A common sized tumbler holds half a pint or sixteen large tablespoonfuls.

Four ordinary teacups of liquid equal a quart.

95. **To Clean Coat Collars and Remove Gloss from Seams and Elbows.**—Rub the parts with a clean flannel dipped in either benzine or aqua ammonia or a solution made by dissolving a piece of carbonate of ammonia the size of a walnut in a cup of warm water. These are inexpensive and will not change the color. Do not use benzine in a room where there is a light or fire.

96. **Liquid Glue.**—Dissolve glue in nitric ether and it will be twice as adhesive as that dissolved in hot water. The glue cannot be made too thick as the ether will dissolve only a certain amount of glue and will be of about the consistency of molasses. If a few bits of India rubber are dissolved in it the glue will be all the better and will stand moisture better.

97. **Cement for Broken China.**—Dissolve gum arabic in water until it is quite thick and then stir in plaster of Paris until it makes a sticky paste. Apply with a brush, stick the pieces together and after three days you cannot break the china in the same place.

98. **Fire-Kindler.**—Soak corn-cobs in kerosene oil; when needed put a cob in the stove, set fire to it and put on the fuel.

99. **To Loosen Covers of Fruit Jars.**—Place the cover in hot water for two or three minutes and it may then be easily unscrewed.

100. **To Wash Calicoes, Cambrics and Muslins.**—Before washing, soak them in water in which has been dissolved one or two tablespoonfuls of salt to each pail of water.

101. **To Wash and Dry Flannels.**—Wash flannels with as little rubbing as possible. Pull them both lengthwise and crosswise while drying rapidly.

102. **Washing Black and White Calicoes.**—Soak them first in water to which has been added one or two cups of weak lye to each pail of water.

103. **Washing Pink and Green Calicoes.**—It is best to use one or two tablespoonfuls of vinegar to each pail of water.

104. **Washing Purple or Blue.**—Use one or two tablespoonfuls of either salsoda or borax to each pail of water.

105. **To Wash Ribbons.**—Ribbons should be washed in cold suds and should not be rinsed.

106. **To Remove Paint Spots from Windows.**—Dissolve an ounce of salsoda in a pint of soft water. Use it hot. Tie a flannel on a stick, dip into the liquid and apply until the paint is softened, then wash off with hot water.

107. **Washing Windows.**—Add a tablespoonful of either powdered borax or ammonia to a gallon of warm water and wash the windows, using a chamois to dry and polish them.

108. **China and Glass Cement.**—Mix one pint of milk with one pint of vinegar; take out the curds and to the whey add the whites of five eggs; beat well together and add enough finely sifted quick lime to make a thick paste. This cement is fine for mending glass and china as it is affected by neither fire nor water.

109. **Grafting Wax.**—Melt together two pounds of rosin and a half pound each of tallow and beeswax. Mix thoroughly, cool in cold water and work until it is pliable. It will keep for years.

110. **To Destroy Currant Worms and Rose Slugs.**—Spray the bushes with a solution of one pound of powdered hellebore to twenty-five gallons of water.

111. **Cabbage Worms.**—Spray the cabbages with a mixture of six quarts of water, one ounce of yellow soap and one pint of kerosene, and you will kill the worms without injuring the plant. This mixture should be kept well mixed while applying.

112. **Treatment of New Cooking Utensils.**—Iron pots should be boiled out first with wood ashes and cold water and then thoroughly washed. They are then ready for use. Griddles, skillets, waffle irons and iron gem pans should be greased and allowed to burn off once or twice before they are used for cooking.

113. **To Wash Greasy Skillets.**—Greasy skillets are best cleaned when hot. The addition of a little soda to the first water will make them more easily cleaned.

114. **To Clean Bottles and Cruets.**—These are best cleaned with shot and soap suds. Save the shot in a bottle to be used again.

115. **Care of Coffee Pots.**—If you would have good coffee always keep the inside of the pot clean. Boil it out once in a while with soap, water and wood ashes and scour it thoroughly.

116. **The Teakettle.**—In localities where there is lime in the water it is well to keep an oyster or egg shells in the teakettle to receive the lime deposits.

117. **To Clean Kitchen Floors, Tables and Wooden Articles.**—Use sand or bath brick to scrub floors, tables and wooden articles.

118. **To Keep Silverware.**—It keeps best when wrapped in blue tissue paper.

119. **To Keep Hinges from Creaking.**—Dip a feather into oil and rub them with it.

120. **To Drive Away Fleas.**—Sprinkle a few drops of lavender about the beds and other places they infest.

121. **To Drive Away Red Ants.**—Put a small bag of sulphur in the drawers and cupboards.

122. **Icy Windows.**—Rub the glass with a sponge dipped in alcohol and the windows will be kept free from ice. Alcohol is also good to polish them with.

123. **To Kill Roaches.**—They may be poisoned by sprinkling the floors at night with hellebore.

124. **To Keep Pails and Tubs from Shrinking.**—Soak them with glycerine and the pails and tubs will not shrink and fall to pieces.

125. **To Keep Flies Off Gilt Frames.**—Boil three or four onions in a pint of water and apply the water to the frames with a soft cloth or brush.

126. **To Remove Dry Putty from Window Frames.**—Pass a red hot poker over the putty and it may easily be removed.

127. **To Soften Hard Water.**—Water may be softened by boiling it. Hard spring water is softened by adding a piece of chalk to it. Cistern water that is hard from long standing may be softened by the addition of a little borax.

128. **To Remove Smell of Fresh Paint.**—Mix chloride of lime in water, sprinkle hay with it and place in the room.

129. **To Clean Chromos.**—Go over them carefully with a slightly dampened linen rag. If any of the varnish is off apply a thin mastic varnish.

130. **To Clean a Sponge.**—Rub fresh lemon juice thoroughly into a soured sponge, then rinse several times in warm water and the sponge will be as sweet as when new.

131. **To Take Kerosene and Grease Spots from Carpets.**—Cover the grease spot with flour and then pin a thick paper over it and after leaving awhile sweep up the flour. Repeat several times.

132. **Hard Whitewash.**—Dissolve five cents worth of glue in warm water and mix with ten cents worth of kalsomine, two quarts of soft soap and bluing. Fine for halls, fences, etc.

133. **To Remove Bad Smells from Clothing.**—Articles of clothing or any other articles which have bad smelling substances on them may be freed from the smell by wrapping them up lightly and burying in the ground for a day or two.

134. To Mend Tin.—Scrape all rust and grease from the parts to be mended, rub a piece of resin on it till a powder lies about the hole, lay a piece of solder over it and hold a hot poker or soldering iron over it until the solder melts.

135. To Remove Grease from Wood Before Painting.—Whitewash the parts at night and wash off in the morning. Let it dry before painting. It is as well to lay a little slacked lime on the parts and dampen a little.

136. Lightning Cream for Clothes or Paint.—Dissolve four ounces of finely cut white castile soap in one quart of soft water over the fire; remove from fire; add four ounces of ammonia, two ounces of alcohol, two ounces of ether and one ounce of glycerine.

137. Magic Furniture Polish.—One-half pint of alcohol, one-half ounce gum-shellac, one-half ounce resin, a few drops of aniline brown; mix and let stand over night, then add one-half pint spirits of turpentine and three-fourths pint of raw linseed oil. This should be well shaken before using. Apply with a cotton flannel and rub dry with another cloth.

138. To Temper Lamp Chimneys and Other Glassware.—Put them into cold water; bring slowly to the boiling point and let them boil for an hour. They should be allowed to cool before removing from water.

139. A Good Cement for All Kinds of Articles.—Mix litharge and glycerine until of the consistency of thick cream or fresh putty. This is good for fastening on lamp posts, mending stone jars, stopping leaks in seams of wash boilers or tin pans, cracks in iron kettles, etc. It is not affected by water, heat or acids.

140. To Clean Wall Paper.—Blow the dust off the wall with a bellows and then, beginning at the top of the room, go all over the paper, rubbing it with downward strokes with pieces of stale bread. Or, tie about two quarts of wheat bran in a flannel and go over the paper with that. Or, dry corn meal may be used instead of bread. Apply on a cloth. Grease spots may be removed by laying a blotter over them and then holding a hot flatiron on the blotter.

141. To Drive Away Red Ants.—Scatter sweet fern in the places they frequent.

142. To Remove Egg Stains from Silverware.—Rub the silverware with a little salt or wash in water in which potatoes have been boiled.

143. To Remove Taste of Fish from Tableware.—Rub steel knives and forks with fresh lemon or orange peel to remove the taste of fish.

144. Corks.—If they are too large put them into hot water for a few moments to soften.

145. To Prevent Rusting of Cutlery.—After wiping dry, wrap it in coarse brown paper.

146. To Brighten Tin Teakettles.—With a woolen cloth saturated with kerosene a tin teakettle may be rubbed as bright as new.

147. Care of Wire Tableware.—It will keep bright if washed in clean water with soap added. Never scour it.

148. Silver Polish.—Add three ounces of precipitated chalk and two ounces of ammonia to one quart of rain water. Keep well corked in a bottle and shake before using.

149. Cement for China, Marble and Glassware.—Add enough finely powdered quick lime to the whites of two eggs to make a thick paste.

150. **Water-proof Paper Covering for Jars—Used in Preserving, Etc.**—Brush the paper over with boiled linseed oil and hang over a line until dry.

151. **To Remove Tight Glass Stoppers.**—Wet a cloth in hot water and wrap it around the neck of the bottle. Another way is to wind a cord once around the neck of the bottle and saw back and forth a few times until the neck is heated and expands.

152. **To Clean Knives.**—Take a raw potato, cut it in two, dip the flat surface in brick dust and rub the knife blades. This will remove rust and stains. A cloth or a cork may be used in like manner.

153. **A Fire Kindler.**—Melt together a quart of tar and three pounds of resin and stir in as much pulverized charcoal and sawdust as possible; spread on a board to cool and then break it into lumps the size of a walnut. These lumps may be lighted with a match and will burn quite a while with a good blaze.

154. **To Clean Brass or Copper Kettles.**—First scour with soap and ashes, then put in a handful of salt and a half pint of vinegar; put over the fire and let come to a boil and wash out thoroughly, afterwards rinsing with water. If the kettle is used every day the scouring with soap and ashes may be omitted.

155. **To Soften Water.**—Boil a small bottle in a kettle of water to soften the water. The carbonate of lime and other impurities will be found adhering to the bottle.

156. **To Remove Rust from Plows and Other Steel Implements.**—Rub the steel well with sweet oil and let it remain for two days, then rub it with finely powdered unslacked lime until the rust is removed.

157. **To Polish Iron or Steel.**—Vienna lime and alcohol applied with leather, chamois, a cork or piece of soft wood will give a fine polish to iron or steel.

158. **To Clean White Zephyr.**—Rub with either magnesia or flour and change often. Shake off the flour or magnesia and hang for a short time in the open air.

159. **To Clean Alpaca.**—Sponge alpaca with strained coffee and iron on the wrong side with black cambric under the goods.

160. **To Take Out Machine Oil.**—Rub with a little soap and wash out in cold water. Another way is to rub with a little butter or lard and wash in warm water.

161. **To Stiffen Linen Collars and Cuffs.**—Add a teaspoonful of brandy and a small piece of white wax to a pint of fine starch. Soap the bottom of the iron if it sticks.

162. **To Clean Rusty Wash Boilers.**—Wash them with sweet milk or grease with lard.

163. **To Remove Paint from Clothing.**—Saturate the spot two or three times with equal parts of spirits of turpentine and ammonia and then wash out with soap suds. This treatment will remove paint no matter how dry or hard it may be.

164. **To Restore Velvet.**—Velvet when crushed may be restored to its original beauty by holding it over a basin of hot water with the wrong side next the water.

165. **To Remove Spots, Caused by an Acid, from Cloth.**—Touch the spots with spirits of hartshorn.

166. **To Remove Spots, Caused by an Alkali, from Cloth.**—Moisten the spots with either vinegar or tartaric acid.

167. **To Prevent Blue from Fading.**—All shades of blue may be prevented from fading by soaking for two hours in a solution of an ounce of sugar of lead to a pail of water. The material should then be allowed to dry before washing and ironing.

168. **To Wash Red Table Linen.**—Set the color by using warm or tepid water in which a little powdered borax has been dissolved; wash the article separately and quickly, using but a very little soap and rinse in tepid water containing a little boiled starch; hang in the shade and iron when almost dry.

169. **To Clean Alpaca.**—Put the goods into a boiler half full of cold rain water and let come to a boil and boil three minutes. Wring out of the boiling water and put into a pail of very dark indigo water, let remain for half an hour, wring out and iron while damp.

170. **To Clean Velvet.**—Turn a hot flatiron bottom side up, put one thickness of wet cotton cloth over it, lay the velvet on this with the wrong side next the wet cloth, rub gently with a dry cloth until the pile is raised then lay the velvet on a table and brush with a cloth or soft brush.

171. **To Take Grease Out of Woolens, Silks, Paper, Floors, Etc.**—Grate either French or common chalk thickly over the spot, cover with a brown paper, set a hot flatiron on it and let it remain until cool; repeat if necessary. See that the iron is not hot enough to burn the paper or cloth.

172. **Silver Polish for Shirts.**—One ounce borax, one ounce isinglass, two teaspoonfuls white of egg, one teaspoonful white glue; cook well in two quarts of fine starch. Starch in this and dry. Before ironing apply it to the cuffs and bosom with a cloth until well dampened and iron immediately with a hot glossing iron.

173. **To Clean Black Lace.**—Wipe off all the dust carefully with a cambric handkerchief; then pin it on a board, inserting a pin in each point of lace that projects. Sprinkle it all over with table beer and leave it until perfectly dry when it will look fresh and new.

174. **To Remove Iron Rust from Clothing.**—When rinsing the clothes dip the wet finger in oxalic acid and rub on the spot, then dip in salt and rub on and then hold on a hot flatiron. Rinse again and rub with the hands.

175. **To Wash Neckties and Other Goods that Fade.**—Instead of soap use crude ammonia. Use a teaspoonful of spirits of hartshorn to two teacups of water for washing neckties. If they are much soiled put through a second wash not quite so strong. Lay the tie on a clean white cloth and wipe it gently with another cloth until dry.

176. **To Clean Woolen and Silk Dress Goods.**—Any woolen or silk dress goods may be washed and rubbed in gasoline without injury. The dirt is quickly removed without injuring the colors. Do not use gasoline near a stove or light.

177. **To Clean Silk and Thread Gloves.**—Put the gloves on the hands and wash them in white castile soap suds or in borax water the same as though washing the hands; rinse by holding under a stream of water and dry with a towel. Keep them on until half dried, remove and fold carefully like new gloves and lay between towels under a weight.

178. **To Wash Delicate Colored Muslins.**—Make a thick corn meal mush, salt it well and use instead of soap; rinse in one or two waters. It will not need starching.

179. **Washing Laces.**—Mix the dry particles of starch with enough cold water to make a smooth paste and add cold water until it looks like milk and water and boil in a glazed earthen vessel until transparent. While the starch is cooling squeeze the laces through soap suds and rinse in clear water. If you desire them to be clear white, add a little bluing; if ivory white, omit the bluing; if yellow-tinged, add a few teaspoonfuls of clear coffee to the starch. Run through the starch, squeeze, roll up in towels, and clap each piece separately until dry. Pull gently into shape from time to time and pin upon the ironing board. When dry press between tissue paper with a hot iron. Punch the openings and pick each loop on the edge with a large pin until it looks like new.

180. **To Bleach Muslin.**—For fifteen yards of muslin dissolve one-half pound of chloride of lime in a quart of rain water. Soak the muslin over night in warm rain water. Wring out the cloth and put in another half tub of warm rain water in which the solution of lime has been poured. Leave it in this for about twenty minutes but lift up cloth for an airing every few minutes. Rinse in clear rain water. Will not injure the cloth.

181. **To Wash Lace Curtains.**—Carefully shake out all the dust and put the curtains into tepid water in which is dissolved a little soda and without soaking wash at once in several waters. Rinse in water that has been well blued; also blue the boiled starch deeply and squeeze, but do not wring, the curtains. If you have no curtain frames, some sheets may be pinned on the carpet in a vacant room and the curtains pinned to them. Have the curtains stretched to same size as before washing. In a few hours they will be dry and ready to put up. The curtains should not be soaked and the washing and stretching should be done as quickly as possible for curtains shrink rapidly. They should be measured before washing so they may be stretched to the same size.

182. **To Keep Cranberries.**—Put them into a keg of water and they may be kept all winter.

183. **To Keep Celery.**—Bury it in dry sand.

184. **To Keep Onions.**—The best way is to spread them over the floor.

185. **To Keep Turnips.**—Bury them deep in the ground and they will keep until spring.

186. **To Keep Lemons.**—They will keep and also be more juicy if kept covered with cold water. The water should be changed every week.

187. **To Keep Parsnips and Salsify.**—Unless the climate is very severe they should be left in the ground all winter, otherwise they should be buried in a deep pit in the garden.

188. **To Keep Parsley Green and Fresh.**—Make a strong, boiling hot pickle of salt and water and keep it in this for use. If wanted for soups and stuffing, hang it up in bunches in a dry attic, with the blossoms down.

189. **Whitewash for Cellars.**—Add an ounce of carbolic acid to a gallon of whitewash or add copperas to ordinary whitewash until it is yellow. Copperas is a disinfectant and will drive away vermin. Carbolic acid will prevent the odors which taint milk and meat.

190. **To Keep Cellars Clean.**—Remove all vegetables as soon as they begin to decay and ventilate well. Sprinkle with chloride of lime, which is a disinfectant.

191. **To Keep All Kinds of Herbs.**—Just before or while the herbs are in blossom gather them on a dry day, tie in bundles and hang up with the

blossoms downward. When they are perfectly dry those that are to be used as medicine should be wrapped in paper and kept from the air while those that are to be used in cooking should have the leaves picked off, pounded, sifted fine and corked tightly in bottles.

192. To Keep Cabbages.—Cut them off near the head and carry to cellar with leaves on, break off the leaves and pack the cabbages in a light box with the stems upward. When the box is nearly full cover with loose leaves and put the lid on to keep rats out. They should be kept in a dry cellar.

193. To Keep Potatoes.—They should be kept in a cool, dark place. When old and likely to sprout, put them into a basket and lower them for a minute or two into boiling water. Let them dry and put in sacks. This destroys the germs without injuring the potato and allows it to keep its flavor until late.

194. The Temperature at Which Vegetables Should be Kept.—Vegetables should be kept at as low a temperature as possible without freezing. Apples will stand a very low temperature but sweet potatoes should have a dry and warm atmosphere and should be kept well packed in dry leaves. Squashes should be kept in a dry place and as cool as possible without freezing.

195. To Keep Peas for Winter Use.—Shell them and put into boiling water with a little salt added, boil for five minutes. Drain in a colander and afterwards on a cloth, then place in air-tight bottles. When used they should be boiled until tender and seasoned with butter.

196. To Keep Apples.—Apples are usually kept on open shelves where any that begin decaying may be removed immediately. Sometimes they are packed in layers of dry sand but care should be taken that they do not touch each other. They may also be packed thus in any grain, such as oats, barley, etc. If the apples are very choice, each one should be wrapped separately in paper and packed in a box.

197. To Keep Grapes.—The simplest way is to keep them in drawers or boxes which hold about twenty-five pounds each, and pile them one above another. A better way is to hang a barrel hoop from the ceiling by three cords; seal the stem with sealing wax, attach a wire to the small end of the bunch and hang on the hoop, taking care that no two bunches touch. The imperfect grapes should previously have been picked off. The room should not be too moist and yet not so dry as to wither the grapes and it should be free from frost.

198. To Keep Vegetables.—If they are to be kept a long time they should be pulled on a dry day and the tops should be cut off and trimmed. Pack them in layers in barrels or boxes with moss between and over them. The moss keeps them from shriveling and yet keeps out any excess of moisture.

199. Mucilage.—Dissolve three ounces of gum arabic by putting it into one-half pint of cold water and stirring frequently.

200. To Remove Coffee Stains.—Mix the yolk of an egg with a little water that is slightly warm and use it on the stain like soap. If the stains have been on for some time a little alcohol should be added to the egg and water.

201. To Restore Feathers.—Sprinkle a little salt on a hot stove and hold the plume in the fumes for a few minutes.

202. To Clean Feathers.—Pour boiling water over some white curd soap which has been cut into small pieces and add a little pearlash. When dissolved and cool enough for the hand, put the feathers into it and draw them

through the hand until all the dirt is squeezed out, then pass them through a clean lather with bluing in it. Rinse in cold water with blue to give them a good color. Shake the water off by striking them against the hand, then dry them by shaking near a fire. To clean black feathers use water and gall and wash and dry in like manner.

203. **To Curl Feathers.**—When nearly dry draw each flue or fibre over the edge of a blunt knife, turning it the way you want it to curl; if the feather is to be flat, press it between the leaves of a book.

204. **Magic Annihilator.**—To make a gross of 8-ounce bottles of annihilator, take one gallon aqua ammonia, four pounds of best white soap, eight ounces of saltpeter and eight gallons of soft water. Pour the water over the soap which has previously been shaved fine and boil until dissolved. Let it get cold, then add the saltpeter and stir until dissolved. Strain, let the suds settle, skim off the dry suds, add the ammonia and bottle and cork at once.

What It Will Do.—It will remove all kinds of oil and grease from every description of wearing apparel, such as coats, vests, pants, dress goods, carpets, etc., and will not injure the finest laces and silks. It works like a charm when used as a shampoo, lathers freely and removes all grease and dandruff. A cloth wet with it will remove every particle of grease from door knobs, window sills, etc. It will remove paint from a board no matter how dry or hard the paint may be and will not injure the finest textures. It acts on oil or grease, turning it to soap which may be washed out with cold water. Nothing can beat it for cleaning brass, copper and silverware. It will positively exterminate bed bugs.

Directions for Using.—To remove grease spots pour some of the Magic Annihilator upon both sides of the article to be cleaned and rub well with a clean sponge. If the grease upon carpets and coarse goods is hard and dry, use a stiff brush and afterwards wash out with clear, cold water. One application is all that is ever required to remove fresh grease spots but two applications may occasionally be necessary to remove old spots. For a shampoo mix the Annihilator with an equal quantity of water and apply to the hair with a stiff brush, rub well into the pores and wash out with clear water. It will give the hair a gloss like silk. For cleaning silver, brass and copper mix a little whitening with a small quantity of the Annihilator, apply to the metal and rub briskly with a rag. Apply it to beds and other places where they frequent and you will soon be rid of the bugs. Many other uses will be found for the Magic Annihilator.

205. **To Remove Sealing Wax.**—Apply either alcohol or naphtha to the spots with a camel's-hair brush.

206. **To Remove Tar.**—Scrape off all the tar possible and then thoroughly wet the place with either melted lard or good salad oil and let it remain for twenty-four hours; if woolen or silk, take out the grease with either spirits of wine or ether; if cotton or linen, wash out in strong, warm soap suds.

207. **To Make Bluing for Clothes.**—Powder one ounce of soft Prussian blue and put it into a bottle with a quart of clear rain water, then add one-fourth ounce of oxalic acid. Use a teaspoonful for a large washing.

208. **Patent Soap.**—Three pounds grease, three pints salsoda, one-half pint turpentine, two pounds resin soap, forty gallons water; boil one hour. This makes a great soap.

209. **Brilliant Self-Shining Stove Polish.**—Take black lead (plumbago),

finely pulverized, and put into 2-ounce wooden boxes; label them neatly and retail for 10 or 15 cents per box, or wholesale at \$6.00 per hundred. It costs three cents per box to prepare.

Directions.—This polish requires no mixing which is so disagreeable to the housewife. Dip a damp woolen cloth into the box and apply to the stove, then polish with a dry cloth. It will give a very beautiful polish. Stove polish is a necessity in every home and if you have the best, as this is, you will make a sale at every house. Step up and polish a small place on the stove and the sale is made. If the stove is not convenient, use a piece of wood, a sheet of paper, a potato or almost any article and you will have a lustre like a burnished mirror. This is a great invention and will make money for those who push the sale.

210. To Clean Gold Chains, Etc.—Let the article lay in a solution of caustic potash until all the dirt is removed.

211. To Kill Carpet Bugs.—Put one tablespoonful of corrosive sublimate into a quart of hot water and saturate the floors and cracks in the walls. If the carpet is to be sponged use a weaker solution. It will be found a sure treatment.

212. To Sweeten Rancid Butter.—Use 15 drops of chloride of lime to a pint of cold water and wash the butter thoroughly with it until it has touched every particle; then work the butter over in clear, cold water.

213. Liquid Glue.—Dissolve half a pound of best glue in three-fourths pint of water and add one-half pint of vinegar. This glue is always ready for use without warming.

214. Concrete.—Add 15 barrows of sand to 8 barrows of slacked lime that is well deluged with water. Do not use river or beach sand as it absorbs moisture. Mix to a creamy consistency and add 60 barrows of coarse gravel and work well. Stones 9 or 10 inches in diameter may be put into this mixture and it will become as hard as rock.

215. Patent Blacking.—One gallon alcohol, $1\frac{1}{2}$ pounds gum shellac, 1 ounce sulphuric acid; let stand for 48 hours, then add $\frac{1}{4}$ pound ivory black. Let stand 24 hours, then carefully pour off the top. This is for the polishing of all kinds of leather and is waterproof. A four-ounce bottle retails for \$1.00 and \$50.00 was the original cost of this recipe. Of course it may be made in smaller quantities by using the same proportions.

216. Axle Grease.—One pound tallow, $\frac{1}{4}$ pound black lead, $\frac{1}{4}$ pound castor oil; melt the tallow; add the other ingredients and rub all together until cold and well mixed.

217. To Find the Number of Bushels in a Bin.—Multiply together the three dimensions in feet to get the number of cubic feet and deduct $\frac{1}{5}$ and you will have approximately the number of bushels in the bin.

218. To Measure Hay.—Fifteen to eighteen cubic yards of hay well settled in mows or stacks make a ton; 20 to 25 cubic yards make a ton when loaded on a wagon from mow or stack; 25 cubic yards of dry clover make a ton. To find the number of tons in a mow multiply the length, width and height in yards and divide by 15 if well settled and by 18 if not so well settled.

219. Apple Tree Louse.—Lime and tobacco juice mixed together will kill them.

220. Army Worm.—A ditch around the field to be protected will arrest their progress so that they may be killed by covering with earth, by crushing

with rollers, pouring coal oil in ditch or burning straw over them. The side of the ditch next the field should be perpendicular or sloping under so they cannot easily crawl out.

221. **Bark Lice.**—Use a strong lye made from wood ashes or diluted soft soap or a mixture of lime, whitewash and kerosene. If the latter is used there should be a pint of kerosene to a gallon of whitewash.

222. **Apple Tree Borers.**—During the spring or early summer the trees should be washed with strong soap suds to kill the borers.

223. **Cinch Bugs.**—They may be destroyed with a mixture of soap suds and kerosene. Make the suds by using one pound of soap to ten gallons of water, then use equal parts of the suds and kerosene to make the emulsion.

224. **Colorado Beetle or Potato Bug.**—Dust the vines with Paris green, London purple or carbonate of lime.

225. **Corn Moth.**—Fill up all cracks and sweep the floors and walls clean before storing the corn. To destroy the moths, fill all cracks and then sprinkle the floor with a mixture of strong white wine vinegar and salt before laying up the corn. If the moth has deposited its eggs on the grain salt may be mixed with it.

226. **Grain Weevil.**—The granary should be fumigated thoroughly with burning sulphur before the grain is stored and again in about two months.

227. **Caterpillars.**—These may be destroyed with powdered hellebore.

228. **Hessian Fly.**—Quicklime scattered over the field immediately after the grain is cut will destroy the pupæ. It is well to thresh as soon as possible after the grain is cut then to scatter the straw over the stubble and burn. Another way is to turn the cattle on the young wheat while the ground is yet frozen and let them eat the wheat close to the ground.

229. **Strawberry Worms.**—Poultry will destroy them. They should be turned into the patch before the berries are formed. Spray the plants with one pound of white hellebore in twenty gallons of water.

230. **To Cut or Break Glass in Any Shape.**—File a notch in the edge of the glass at the place you wish to begin to break from; then put a red hot iron on the notch and draw it in the direction you wish the glass to break. If the iron be drawn slowly a crack will follow it. Another way is to hold the glass level under water and cut with a pair of shears.

231. **To Bore Holes in Glass.**—Any hard steel tool will easily cut glass if it be kept moist with camphor dissolved in turpentine. A drill may be used or, if that be not available, the tool may be held in the hand. A window glass may be easily sawed with a watch spring saw if this solution be used.

232. **To Clean Tobacco Pipes.**—Pour alcohol into the bowl and allow it to run out of the stem. This will thoroughly clean and sweeten the pipe.

233. **To Petrify Wood.**—Mix equal parts of rock alum, gem salt, white vinegar, chalk and pebbles powder; after the ebullition has ceased throw any piece of wood or other porous substance into the solution and it will petrify.

234. **To Remove Blood Stains.**—Steep the article in lukewarm water. If pepsin is at hand apply it after first softening the spots in lukewarm water.

235. **To Remove Tar, Wagon Grease, Mixtures of Fat, Carbon and Acetic Acid.**—If the spots be on white goods apply soap and oil of turpentine, alternating with streams of water. If the spots are on colored cottons or woolens, rub in with lard; let it lie; soap; let lie; and proceed, alternating with oil of turpentine and water. Treat silks the same only use benzine in place of turpentine.

236. Black Ink, Copying or Writing Fluid.—Rain water, one gallon; brown sugar, one-eighth pound; gum arabic, one-eighth pound; powdered nut-galls, three-eighths pound; clean copperas, one-eighth pound; bruise and mix, then let stand for 10 days, shaking occasionally; strain. If not used as a copying ink but one-fourth of the sugar or gum is needed as it will then flow more freely. This ink is fine for records and deeds for it may be read hundreds of years hence.

DYEING AND COLORING.

General Remarks.—Every article to be dyed should be perfectly clean. They should be washed thoroughly with soap and then rinsed. To prevent spotting, the goods should be dipped into warm water just before they are put into the various coloring preparations. After the article is dyed it should be aired awhile, then well rinsed and hung up to dry. Cotton goods should first be bleached if they are to be dyed a light color. Never wring silk or merino dresses. Use soft water and where the quantity is not mentioned enough should be used to well cover the goods.

COTTON GOODS.

237. Black.—For 5 pounds goods take 3 pounds (wood and bark together) of sumac and boil one-half hour and let the goods steep in this for 12 hours; then dip for half an hour in lime water and let drip for an hour; now add half a pound of copperas to the sumac liquor and dip the goods again in this for an hour and then for one-fourth hour in the lime water. Make another dye by boiling 2½ pounds of logwood for an hour and dip the goods in this for three hours, then add 2 ounces bi-chromate of potash and dip for another hour. Wash the goods in cold water and dry in the shade.

238. Brown for Cotton, Woolen or Silk.—For coloring 5 pounds of goods dissolve two ounces of alum and one pound of catechu in enough hot water to wet the goods. Put this solution into a tin boiler or a brass kettle on the stove and put in the goods when it is boiling hot and remove from the fire. You should have ready 4 ounces of bi-chromate of potash dissolved in hot water in a wooden pail. Drain the goods from the catechu and then dip them alternately into the bi-chromate of potash and catechu until of the desired shade.

239. Sky Blue for Cotton or Silk.—Dissolve two ounces of blue vitriol in one gallon of water and dip the goods for fifteen minutes, then put through lime water.

240. Blue.—For 5 pounds of goods dissolve 4 ounces of copperas in 3 or 4 gallons of water and soak the goods thoroughly, then drain and put them into a solution of 2 ounces of prussiate of potash in 3 or 4 gallons of water. Lift the goods and put them to drain, then pour ½ ounce oil of vitriol into the prussiate of potash solution, stirring carefully and pouring in but a few drops at a time. Put the goods in this solution until of the desired shade then rinse in clear water and hang up to dry.

241. Yellow.—For 5 pounds of goods dissolve 1 pound of sugar of lead in enough water to thoroughly wet the goods and in the same quantity of water in another vessel dissolve ½ pound of bi-chromate of potash. Dip the

goods well and drain in each alternately until of the desired shade, then rinse and hang up to dry.

242. **Orange.**—Color the goods yellow as given elsewhere but before rinsing dip them into strong, hot lime water.

243. **Green.**—First color blue as given elsewhere, then proceed as in yellow, also given elsewhere.

244. **Red.**—Put $\frac{2}{3}$ teacupful of muriate of tin into enough water to cover the goods well, bring to a boil, put in the goods and leave for an hour, stirring often, then remove them and empty the kettle. Put 1 pound of nicewood into the kettle with clean water and steep for half an hour at hand heat, then put in the goods and slowly increase the heat for an hour but do not boil. Air the goods and dip an hour as before. Wash without soap.

WOOLEN GOODS.

245. **Chrome Black.**—For 5 pounds of goods dissolve 6 ounces of blue vitriol in enough boiling water to cover the goods. Dip the goods 45 minutes, airing frequently, then remove. Make a dye by boiling 3 pounds of logwood for half an hour; dip the goods for 45 minutes, air and dip again for the same length of time. Wash the goods in strong suds. The sun will not fade this.

246. **Brown.**—Color the same as for cotton goods.

247. **Blue.**—For 2 pounds of goods take sufficient water to cover and add 5 ounces of alum and 3 ounces of cream of tartar and boil the goods in this for an hour. Now boil the goods, until the color suits, in warm water containing more or less extract of indigo, according to the color desired.

248. **Yellow.**—For 5 pounds of goods make a solution by adding 2 ounces of alum and 3 ounces of bi-chromate of potash to enough water to color the goods and boil them in this for half an hour; lift and air until well cooled and drained, then work for half an hour in a bath with 5 pounds of fustic. Wash and hang up to dry.

249. **Green.**—For each pound of goods put $3\frac{1}{2}$ ounces of alum and 1 pound of fustic into sufficient water to cover goods; steep until the strength is out before putting in the goods; then soak until a good yellow color is obtained; then remove the chips and add extract of indigo or chemic until of the desired color.

250. **Scarlet.**—For one pound of goods take sufficient water to cover and boil in it $\frac{1}{2}$ ounce of pulverized cochineal, $\frac{1}{2}$ ounce cream of tartar and $2\frac{1}{2}$ ounces muriate of tin; put in the goods and work briskly for 10 or 15 minutes, then stir goods slowly while boiling $1\frac{1}{2}$ hours. Wash and hang in the shade to dry.

251. **Crimson.**—Make a bath of 6 ounces of dry cochineal, 1 pound cochineal paste, 1 pound of tartar and 1 pint of proto-chloride of tin. Work the goods in this bath for an hour, wash out and hang up to dry.

252. **Orange.**—For 5 pounds of goods take sufficient water to cover, 4 ounces argal, 6 tablespoonfuls muriate of tin; boil and dip 1 hour, then add 1 cup of madder and dip for half an hour. A much brighter color will be obtained by using 2 ounces of cochineal instead of the madder.

253. **Pink.**—For 3 pounds of goods use 3 ounces of alum; boil and dip the goods for an hour; then add to the solution 4 ounces cream of tartar and 1 ounce of pulverized cochineal and dip the goods, while boiling, until the desired shade is obtained.

SILK GOODS.

254. **Black.**—For 5 pounds of goods make a dye by boiling 3 pounds of logwood in enough water to cover goods. Work the goods in bi-chromate of potash which is not quite to the boiling point, then dip them in the logwood solution in the same way.

255. **Brown.**—Color the same as for cotton and woolen goods given elsewhere.

256. **Sky Blue.**—Proceed as for cotton goods given elsewhere.

257. **Light Blue.**—Dissolve $\frac{1}{2}$ tablespoonful of alum in a cup of warm water and add to a gallon of cold water, then add a teaspoonful of chemic at a time until the desired shade is obtained. The more chemic is used, the darker will the color be.

258. **Orange.**—For one pound of goods use a pound each of soda and annatto; repeat if desired.

259. **Green.**—For 1 pound of goods boil 8 ounces of yellow oak bark for $\frac{1}{2}$ hour; turn off the liquor from the bark and add 6 ounces of alum; let stand until cold; while this is being made color the goods in the blue dye-tub a light blue; dry and wash; then dip in the oak and alum dye. Warm the dye a little if it does not take well.

260. **Yellow.**—For 1 pound of goods make a solution of $\frac{3}{4}$ ounce sugar of lead and 3 ounces alum and let the goods stand over night in it; take out and drain. Make another dye with 1 pound of fustic; dip in this until the desired color is obtained.

261. **Crimson.**—Dip 1 pound of goods in a solution made with 3 ounces of alum. This should be at hand heat. Take out and drain while making a new dye by boiling for 10 minutes 2 ounces of bruised nut-galls, 3 ounces cochineal and $\frac{1}{4}$ ounce of cream of tartar in one pail of water. When this is a little cool, begin to dip the goods, raising the heat to a boil. Dip for an hour; wash and hang up to dry.

262. **A Quick and Easy Way to Compute Interest.**—Allow 30 days for each month and multiply the amount by the number of days.

The result divided by 60 gives the interest at 6 per cent.

The result divided by 45 gives the interest at 8 per cent.

The result divided by 40 gives the interest at 9 per cent.

The result divided by 36 gives the interest at 10 per cent.

The result divided by 30 gives the interest at 12 per cent.

Example.—\$200.00 for 3 months and 10 days, or 100 days, is 20000; divided by 40 gives \$5.00, which is the interest at 9 per cent; or divided by 60 gives \$3.333, interest at 6 per cent. etc. To find the interest at 5 per cent. first find the interest at 6 per cent. then deduct $\frac{1}{6}$. Or add $\frac{1}{6}$ to find the interest at 7 per cent. etc.

263. **To Find the Number of Gallons in a Barrel or Cask.**—Add the greatest and the smallest diameters in inches together and divide by 2 and this will be the average diameter. Multiply this number by itself, then by the length of the barrel in inches and then by 34 and cut off the four right-hand figures. This is approximately the number of gallons.

Example.—A cask is 28 inches in diameter at the head and 32 inches at the bung and is 36 inches in length; 28 plus 32 equals 60, divided by 2 equals 30, or the average diameter; 30 times 30 equals 900; 36 times 900 equals 32400;

34 times 32400 equals 1101600 and cutting off the four right-hand figures leaves 110 as the number of gallons.

264. **To Find the Number of Gallons in a Round Tank.**—Multiply the diameter in feet by itself (called squaring the diameter), multiply the product by the depth in feet, then multiply by 6 and the result is the approximate number of gallons in the tank.

Example.—A tank is 5 feet in diameter and 7 feet deep; 5 times 5 equals 25, 7 times 25 equals 175, 6 times 175 equals 1050 gallons.

265. **How to Find the Number of Common Bricks in a Wall or Building.**—Multiply together the length, height and thickness in feet and multiply this result by 20 and you will have the number of common bricks in the wall. Find the number in each wall and add these together and you will have the number in the building.

266. **Table of Avoirdupois Weight.**—

437½ grains	equal	1 ounce.
16 ounces	equal	1 pound.
25 pounds	equal	1 quarter.
2000 pounds	equal	1 ton.
2240 pounds	equal	1 long ton.

267. **Miscellaneous Weights.**—

100 lbs. nails	equal	1 keg.
196 lbs. flour	equal	1 barrel.
200 lbs. beef or pork	equal	1 barrel.
280 lbs. N. Y. salt	equal	1 barrel.

268. **Table of Troy Weight.**—

24 grains	make	1 pennyweight.
20 pennyweights	make	1 ounce.
12 ounces	make	1 pound.
480 grains	make	1 ounce.

The troy pound contains 5760 grains while the avoirdupois pound contains 7000 grains. If a merchant sells you a pound of tea by troy weight he cheats you, but if he sells you an ounce by troy weight he cheats himself out of 42½ grains.

269. **Table of Apothecaries Weight.**—

1 drop	equals	1 grain.
20 grains	make	1 scruple, which is equal to ⅓ teaspoonful.
3 scruples	make	1 drachm, which is equal to 1 teaspoonful.
8 drachms	make	1 ounce, which is equal to 2 tablespoonfuls.
12 ounces	make	1 pound.

270. **Table of Fluid Measures.**—

60 drops	make	1 fluid drachm, or 1 small teaspoonful.
8 fluid drachms	make	1 fluid ounce, or 2 tablespoonfuls, or ¼ gill.
16 fluid ounces	make	1 pint, or 4 gills.
1 pint	equals	1 pound in weight except with Ether, Glycerine, Sulphuric acid, Chloroform and a few others.

271. **A Handy Table.**—

1 tablespoonful	equals	4 teaspoonfuls.
1 teacup	equals	4 fluid ounces.
1 coffee cup	equals	6 fluid ounces.
1 wine-glass	equals	from 2 to 4 tablespoonfuls.

272. **Table of Liquid Measure.**—

4 gills	make	1 pint.
2 pints	make	1 quart.
4 quarts	make	1 gallon.

273. How Clothes Are Cleaned by Those Who Make it a Business.—In cleaning establishments, silks and woolen clothes are immersed in gasoline and dipped up and down, and especially the soiled parts are rubbed with ivory soap. They are then rinsed in clean gasoline. The odor is removed by shaking for fifteen or twenty minutes or by hanging on a line where there is a good breeze. Don't use gasoline near a light or stove.

274. To Clean Dark Furs.—Put some new bran into a pan on the stove and heat very hot, stirring so as not to let burn. Rub this thoroughly into the fur several times then shake and brush it till it is free from dust.

275. To Clean Light Furs.—Lay the fur upon a table and with a flannel rub it with bran that is slightly moistened with warm water. Rub until dry then with book muslin apply dry bran. Dry flour will do instead of the wet bran. When through rubbing with the bran or flour rub magnesia the wrong way into the fur then shake and brush.

276. To Clean Straw Hats.—First sponge the hat with a mixture of $2\frac{1}{2}$ drachms sodium hyposulphite, 1 drachm glycerine, $2\frac{1}{2}$ drachms alcohol, $2\frac{1}{4}$ ounces of water; then hang the hat in the cellar or other moist room for 24 hours; then apply a solution of $\frac{1}{2}$ drachm citric acid, $2\frac{1}{2}$ drachms alcohol, 3 ounces of water and again hang in a moist room for 24 hours. The hat should then be gone over with a flatiron that is not too hot.

277. Cut Worms.—Make a little ring of either lime or wood ashes about the plant as a protection against cut worms.

278. Onion Maggots.—The best known remedy is to put chimney soot in the drills.

279. Plant Lice.—A tea made from tobacco, or tobacco smoke, will kill them.

280. Squash Bugs.—Put some white shingles on the ground under the vines and the bugs will collect under them and may be destroyed in the morning.

281. Slugs.—In England the gardeners drop a handful of bran every 8 or 10 feet along the garden walks. The slugs collect on these little heaps of bran and may be swept up in the morning with a broom and dust pan.

282. Scale.—Boil 1 gallon of barley in water, pour off the liquid (the grain will do to feed the chickens) and add quicklime to it until about as thick as paint. When cold add 1 pound of lampblack and mix for a long time then add $\frac{3}{4}$ pound flowers of sulphur and 1 pint of alcohol. Brush the bark of the tree with a stiff brush to remove the moss and then apply the liquid with a paint brush.

283. Canker Worms.—Spread tar, or tar and molasses, on a cloth and bind about the trunk of the tree near the ground. Do this early in the spring and the female worm will be kept from crawling up the tree. Apply kerosene below the cloth to kill the eggs.

284. Grubs.—Apply soap to the trunks of the apple and peach trees during May. In the fall cut out all that have entered the bark.

285. Cucumber Beetles.—About the only way to keep these away is to cover the plants with netting.

286. Celery Pest or Little Negro Bug.—Sprinkle the plants with a mixture of 1 tablespoonful of crude carbolic acid to 2 gallons of water. If preferred, a teacupful of the acid may be mixed with a bushel of either air-slacked lime or land plaster and the plants dusted with this.

HANDY TABLES FOR COOKS.

EGGS.

8 large, or 10 medium sized, eggs equal 1 pound.

BUTTER.

1 lump the size of a medium egg equals 2 ounces.
 1 tablespoonful of soft butter, well filled, equals 1 ounce.
 4 heaping tablespoonfuls of soft butter equal 1 teacupful.
 2 teacupfuls of packed soft butter equal 1 pound.
 1 pint of well packed soft butter equals 1 pound.

FLOUR.

2 heaping teaspoonfuls equal 1 heaping tablespoonful.
 2 heaping tablespoonfuls equal 1 ounce.
 5 heaping tablespoonfuls equal 1 teacupful.
 5 teacupfuls of sifted flour equal 1 pound.
 3½ level teacupfuls of corn meal equal 1 quart.
 1 quart of sifted flour equals 1 pound.

SUGAR.

2 heaping teaspoonfuls equal 1 heaping tablespoonful.
 1 heaping tablespoonful of granulated, best brown, or A coffee equals 1 ounce.
 2 heaping tablespoonfuls of powdered equal 1 ounce.
 2 heaping teacupfuls of A coffee equal 1 pound.
 2 level teacupfuls of granulated equal 1 pound.
 2 level coffee-cupfuls of powdered equal 1 pound.
 2½ level teacupfuls of best brown equal 1 pound.
 2¾ level teacupfuls of powdered equal 1 pound.
 1½ level coffee-cupfuls of granulated equal 1 pound.
 1 pint of A coffee equals 12 ounces.
 1 heaping pint of granulated equals 14 ounces.
 1 quart of powdered equals 1 pound and 7 ounces.
 1 quart of granulated equals 1 pound and 9 ounces.
 1 quart of any kind equals 4 teacupfuls.
 1 teacupful equals 8 fluid ounces or 2 gills.
 1 teacupful or 16 tablespoonfuls equal ½ pint or 2 gills.
 A common-sized tumbler holds ½ pint.

TIME TABLE FOR COOKS.

The time will vary with the quality of the article, etc. The general average is here given. Those marked "a" minutes to pound.

	How Cooked.	Time of Cooking.		Time of Digestion.	
		Hr.	Min.	Hr.	Min.
Apples, sweet and mellow	Raw	.....	.....	1	50
Apples, sour and hard	Raw	.....	.....	2	50
Asparagus	Boiled	.....	15 to 30	2	30
Beans with green corn	Boiled	.....	45	3	45
Beans (pod)	Boiled	1	00	2	30
Beef	Roasted	a	25	3	00
Beefsteak	Fried	.....	15	4	00
Beefsteak	Broiled	.....	15	3	00

Beef, salted	Boiled	a	35	4	15
Bass, fresh	Broiled	.....	20	3	00
Beets, old	Boiled	4	30	4	00
Beets, young	Boiled	2	00	3	45
Bread, wheat	Baked	1	00	3	30
Bread, corn	Baked	.....	45	3	15
Butter	Melted	.....	.....	3	30
Cabbage	Boiled	1	00	4	30
Cabbage	Raw	.....	.....	2	30
Cabbage and vinegar	Raw	.....	.....	2	00
Cauliflower	Boiled	1 to 2	.....	2	30
Cake, sponge	Baked	.....	45	2	30
Carrot, orange	Boiled	1	00	3	15
Cheese, old	Raw	.....	.....	3	30
Codfish, dry and whole	Boiled	a	15	2	00
Chicken	Fricasseed	1	00	3	45
Custard (one quart)	Baked	3	00	2	45
Duck, wild	Roasted	1	00	4	50
Duck, tame	Roasted	1	30	4	00
Dumpling, apple	Boiled	1	00	3	00
Eggs, soft	Boiled	.....	03	3	00
Eggs, hard	Boiled	.....	10	3	30
Eggs	Fried	.....	05	3	30
Eggs	Raw	.....	.....	2	00
Fowls, domestic	Roasted	1	00	4	00
Fowls, domestic	Boiled	1	00	4	00
Gelatine	Boiled	.....	.....	2	30
Goose, wild	Roasted	a	20	2	30
Lamb	Boiled	a	20	2	30
Meat and vegetables	Hashed	.....	30	2	30
Milk	Boiled	.....	.....	2	00
Milk	Raw	.....	.....	2	15
Mutton	Roasted	a	25	3	15
Mutton	Broiled	.....	20	3	00
Onions	Boiled	1 to 2	.....	3	00
Oysters	Stewed	.....	05	3	30
Oysters	Roasted	.....	.....	3	15
Pig's feet	Soused	.....	.....	1	00
Parsnips	Boiled	1	00	3	00
Pork	Roasted	a	30	5	15
Pork	Boiled	a	25	4	30
Pork	Raw	.....	.....	4	15
Pork	Fried	.....	.....	4	15
Pork	Broiled	.....	20	3	15
Potatoes	Boiled	.....	30	3	30
Potatoes	Baked	.....	45	3	30
Potatoes	Roasted	.....	45	2	30
Rice	Boiled	.....	20	1	00
Salmon, fresh	Boiled	.....	08	1	45
Sausage	Broiled	.....	20	3	30
Sausage	Fried	.....	20	4	00
Soup, chicken	Boiled	2	00	3	00
Soup, vegetable	Boiled	1	00	4	00
Soup, oyster	Boiled	.....	.....	3	30
Soup, mutton	Boiled	3	30	3	30
Spinach	Boiled	1 to 2	.....	2	30
Tapioca	Boiled	1	30	2	00
Tomatoes	Fresh	1	00	2	30
Tomatoes	Canned	.....	30	2	30
Trout and salmon, fresh, boiled or	Fried	.....	30	1	30
Turkey, boiled or	Roasted	a	20	2	30
Turnips	Boiled	.....	45	3	30
Veal	Broiled	20	4	00
Venison Steak	Broiled	20	1	35

SUPPLEMENT.
(Additional Recipes.)

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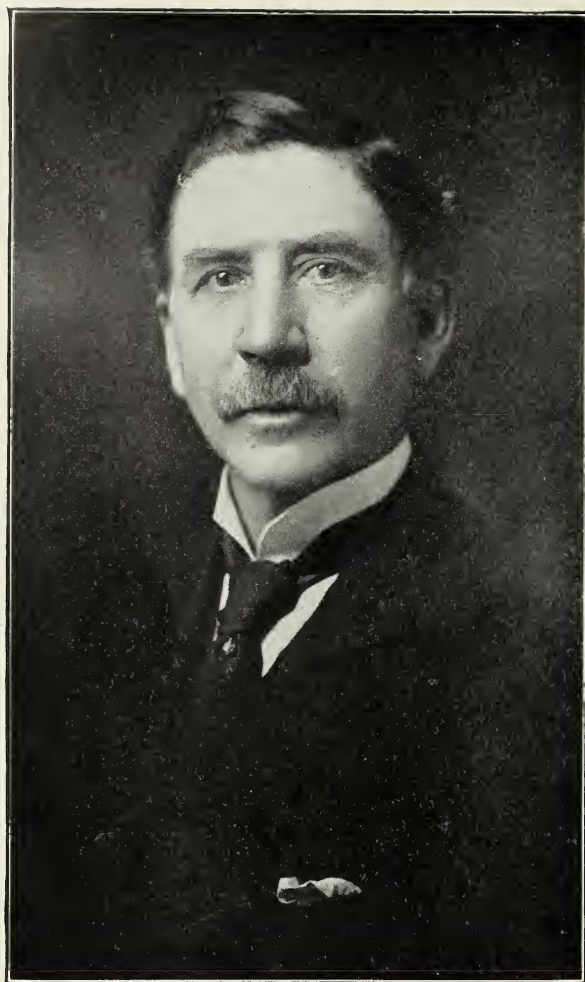
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W. C. Fair, V.S.

THE PEOPLE'S HOME STOCK BOOK



BOOK III OF THE PEOPLE'S HOME LIBRARY



BY
W.C. FAIR V.S.

VETERINARY EDITOR OF BOTH "THE OHIO FARMER" AND "THE MICHIGAN FARMER." FORMERLY PRESIDENT OF BOTH THE CLEVELAND AND THE OHIO STATE VETERINARY MEDICAL ASSOCIATIONS. CONSULTING VETERINARIAN OF THE CLEVELAND HUMANE SOCIETY FOR THIRTY YEARS. PRESIDENT OF THE SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS.
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HOME OF THE "OHIO FARMER" (Established 1848).
Cleveland, Ohio.

Dr. Fair has been Veterinary Editor of both "The Ohio Farmer" and "The Michigan Farmer" for many years.

(Photographed especially for this book.)



HOME OF "THE MICHIGAN FARMER" (Established 1843).
Detroit, Mich.

AUTHOR'S PREFACE.

Having been Veterinary Editor of the "Ohio Farmer" for about thirty years and of the "Michigan Farmer" for nearly fifteen years, I have probably had more correspondence with Farmers and Stock Owners pertaining to the ailments, feeding, and breeding of live stock than has any other Veterinarian in the country. During these many years of connection with these Standard Farm Journals I have answered over a quarter of a million inquiries concerning the diseases and care of domestic animals. Many of these questions have been concerning things either improperly treated or not treated at all in the stock books in use among the farmers. Thus, I believe I am in a position to know just what the farmer and stockman need and my years of experience have perhaps fitted me for treating these subjects in a way easily understood by every person in the country.

Many of the stock books in common use have been written by college professors or retired veterinarians who perhaps had a great deal of scientific knowledge but were lacking in actual experience and consequently most of their books have been written in language not easily understood by the average person. I have long seen the need of a practical book of this kind and have tried to make this work thoroughly scientific and yet so simple and practical that it can be used by every stock owner in the land.

This work has been written at my Veterinary Hospital at Cleveland while actively engaged in my extensive practice. Though it has been with difficulty that I have found time for the work, yet after several years of diligent work and research I have finally succeeded in completing my task and believe that the book will be found all the more practical for having been written while thus actively engaged in my practice. The merits of every remedy prescribed in this book I have thoroughly tested and tried in my practice and at my hospital and having been President of both the Cleveland and the Ohio State Veterinary Medical Associations I have been enabled to learn how these remedies effected cures in the hands of the Veterinary Profession in general. Also, having been Consulting Veterinarian for The Cleveland Humane Society for thirty years and for some time President of The Society for the Prevention of Cruelty to Animals, I have been afforded an excellent opportunity to study sick and disabled animals. Many of the illustrations found in this work are actual photographs taken from life of cases that have been brought to my Veterinary Hospital for treatment and care and among these cases have been some of the most celebrated horses in the world. These illustrations have been procured at the cost of much time and money and I believe they will be found of great value in determining the diseases of stock. A horse can not tell you what the trouble is, but these pictures will aid you in locating the ailment.

Though I have given what I considered the best and simplest remedies, yet in many instances I have seen fit to add to my own treatment of the disease various "People's Home Remedies" which have been gathered from practical farmers and stock owners of many different states. These

are practical and reliable remedies that have been in use for years among successful stockmen and many of them I use and prescribe in my own practice.

Though the purchaser may have other stock books in the home, I believe this work will be found worth many times the price paid for it, as it is really in answer to the quarter of a million inquiries sent me during the last thirty years by both the farmers and veterinarians of the United States and Canada and consequently contains much practical information not found in other books in general use among stockmen.

It was my original plan to keep everything of a "personal" nature out of the book, but the publishers have convinced me that the public desire to know something of the author and his "practical experience" and for this reason I have occasionally cited personal experiences where I thought the purpose would be better served or the point made clearer. It has been my aim to make this book full and complete for practical use and yet I have endeavored to condense it as much as possible by giving in one line the information that one so often has to search through many pages to discover. I trust that it will be found complete and reliable and yet simple and practical.

THE AUTHOR.

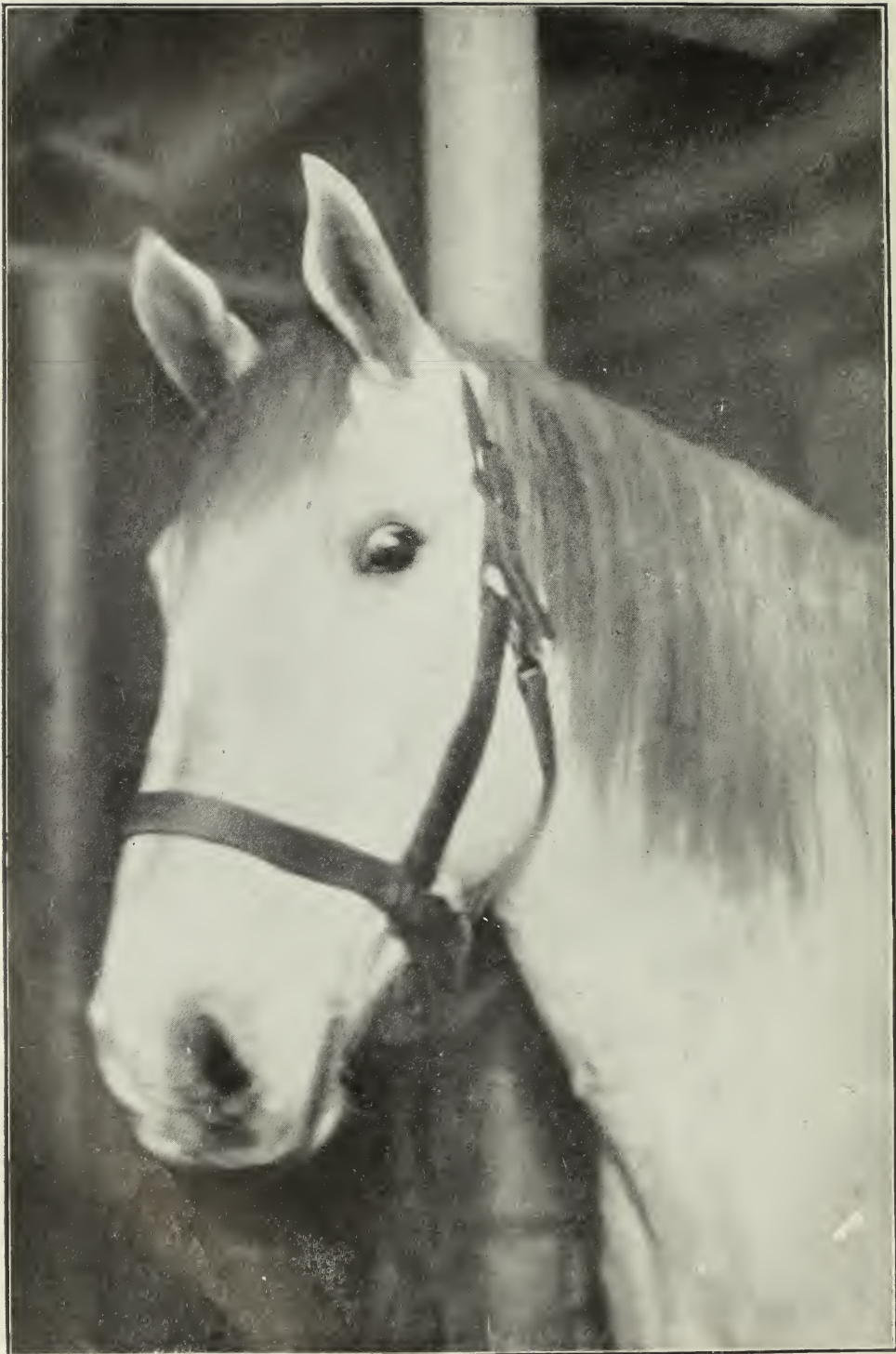
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(Photographed at Dr. Fair's Veterinary Hospital especially for this book.)

THE HOSS.

Love the Hoss from hoof to head,
From head to hoof and tail to mane,
I love the Hoss, as I have said,
From head to hoof and back again.

I love my God the fust of all,
Then him that perished on the Cross;
And next my wife and then I fall
Down on my knees and love the Hoss.
—James Whitcomb Riley.

THE HORSE.

CONFORMATION AND GOOD POINTS, ALSO DEFECTS AND BLEMISHES.

CONFORMATION AND GOOD POINTS.

The head should not be too large but with considerable width between the eyes. The eye should show but little white, have a mild expression and be clear and well developed. The face should be lean; the nostrils large and somewhat open and the muzzle should not be too large but there should be considerable width between the angles of the lower jaw. The ears should be carried erect and be of moderate size. The neck should be long, narrow, arched and moderately deep. The shoulders should be well developed and considerably wider than the neck. The elbows should not turn in and the arm should be long and quite muscular. The knee should be broad in front, tapering back, but straight, for if too far back it resembles a cow's leg and if too far forward the horse is knee sprung. The shin bone should be flat and wide from front to back; the fetlock should be large and the fetlocks should stand at an angle with the floor of about 45 or 50 degrees. The foot should not be too small and should be shaped like a bell. The fore part of the shoulder should afford a comfortable resting place for the collar and the withers should be strong, well developed, and not too round. The breast should be full and wide; the chest should be large; the body should not be too slender; the back should not be too long or too low (sway back) and the loin should be well developed. The last rib should come well back. The hips should be wide, muscular, and not drooped too much. The tail should be wide at dock, tapering, and muscular; it should also be carried away from the body. The hind quarters should come close together, especially around the anus. The quarters should be thick and muscular and the thigh heavy and tapering downward. The hock should be broad, clean and flat; a short, flat shin bone is preferable; the fetlock should be strong and not set too far forward; the pastern should be of medium length and the foot not too small.

DEFECTS AND BLEMISHES.

Defects and blemishes are the result of either predisposing (hereditary) or exciting causes, showing on the external parts of the body. For convenience they may be classified as diseases of the bones, synovial membranes, muscles, tendons, ligaments, skin and also diseases of the foot.

Diseases of the Bones.

Ring-bone.—Location: Between hoof and fetlock joint.

Bone Spavin.—Location: Lower, inner and fore part of hock joint.

Splints.—Location: On the shin, generally high up on inside.

Sidebones.—Location: Always on back part of coronet.

Diseases of Synovial Membranes.

Synovitis.—Location: In the joints or sheaths of tendons.

Bog Spavin.—Location: Fore part of hock joint.

Wind Puffs or Windgalls.—Location: On upper and outer part of fetlock joint.

Bursal Enlargements.—Location: In various parts of the limbs where the tendons run.

Thoroughpin.—Location: On the outer and inner part of hock joint.

Diseases of the Muscles, Tendons, Ligaments and Skin.

Break-down.—Location: Between shin bone and back tendons.

Bowed Tendons.—Location: Back part of leg between fetlock and knee.

Curb.—Location: On the lower and back part of hock.

Capped Hock.—Location: On the upper and back part of hock.

Capped Elbow or Elbow Tumor (Shoe boil).—Location: On the back part of elbow joint.

Broken Knee.—Location: Fore part of knee joint.

Sprung Knees.—Location: Knees; the tilting forward of knee joint.

Cocked Ankles.—Location: Fetlocks; the tilting forward of fetlock joints.

Collar Galls.—Location: The collar-bearing surface of shoulder.

Saddle Galls.—Location: On back where saddle rests.

Cinch Galls.—Location: Under saddle girth.

Fistula.—Location: Upper part of withers.

Poll-evil.—Location: Upper part of neck and back part of head.

Sweeny.—Location: Generally shoulder, hip or leg.

Warts.—Location: Generally about the head, neck and udder.

Canker.—Location: Mouth, ears and heels.

Sprains.—Location: Shoulder, back, hip, stifle, hock, ligaments of joints, tendons of leg and foot (coffin joint).

Diseases of the Foot.

Navicular Disease.—Location: Coffin joint, within foot.

Founder or Chronic Laminitis.—Location: Sensitive laminæ of feet.

Quarter Crack.—Location: Back and outside part of hoof.

Toe Cracks.—Location: Central and fore part of hoof.

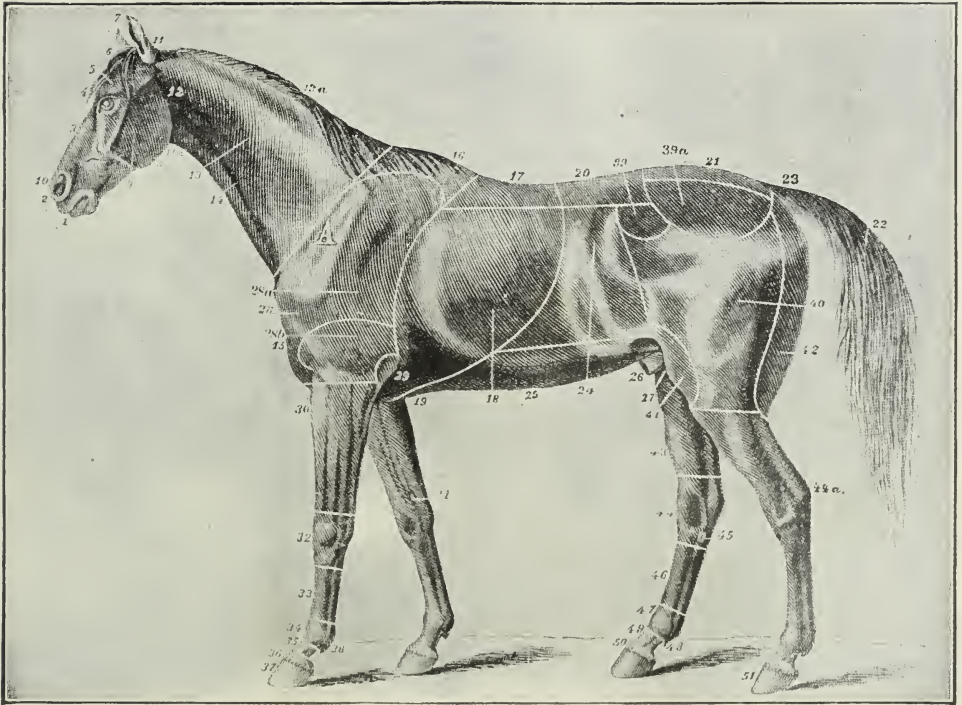
Thrush.—Location: Between the insensitive and sensitive frog.

Corns.—Location: In the extreme back and lower part of sole.

Quittor.—Location: Usually in the upper part of coronet, well back.

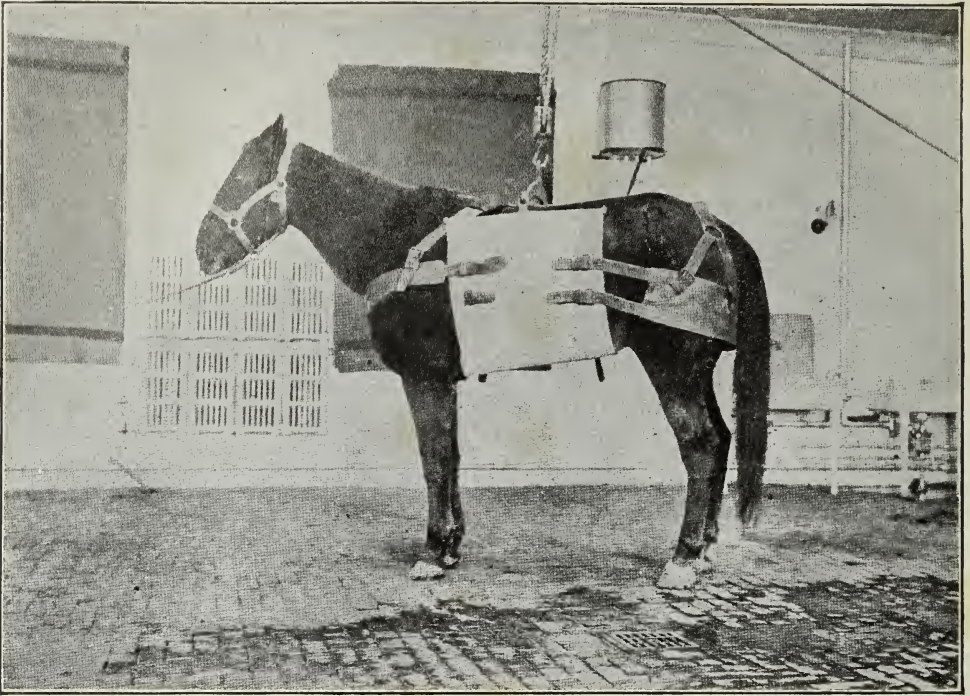
Seedy Toe.—Location: Fore part of hoof and toe.

Contracted Heels.—Location: Heels.



POINTS OF THE HORSE.

- | | | | |
|---------------|------------------------------|------------------------|---------------------|
| 1. Lips. | 14. Jugular channel. | 28. Point of Shoulder. | 40. Thigh. |
| 2. Muzzle. | 15. Breast (front of chest). | 28a. Shoulder. | 41. Stifle. |
| 3. Face. | 16. Withers. | 28b. Arm. | 42. Buttock. |
| 4. Forehead. | 17. Back. | 29. Elbow. | 43. Gaskin. |
| 5. Eyebrows. | 18. Ribs or barrel. | 30. Forearm. | 44. Hock. |
| 6. Forelock. | 19. Girth. | 31. Chestnut. | 44a. Point of hock. |
| 7. Ears. | 20. Loins. | 32. Knee. | 45. Chestnut. |
| 8. Lower jaw. | 21. Croup. | 33. Cannon. | 46. Cannon. |
| 9. Cheek. | 22. Tail. | 34. Fetlock joint. | 47. Fetlock joint. |
| 10. Nostril. | 23. Dock. | 35. Pastern. | 48. Fetlock. |
| 11. Poll. | 24. Flank. | 36. Coronet. | 49. Pastern. |
| 11a. Throat. | 25. Belly. | 37. Foot. | 50. Coronet. |
| 12. Parotid. | 26. Sheath. | 38. Fetlock. | 51. Foot. |
| 13. Neck. | 27. Testicles. | 39. Point of the hip. | |
| 13a. Mane. | | 39a. Haunch. | |



THE HORSE IN SLINGS.

Good slings may be made with an old harness, a piece of heavy canvas and two singletrees.



COMFORTABLE QUARTERS FOR SICK ANIMALS.

This is a corner of Dr. Fair's Veterinary Hospital. Note the high ceiling, giving ample air space and ventilation. Also note sanitary conditions and well lighted stables. A box stall is to the left. Sick and injured animals should be made as comfortable as possible.

(Photographed at Dr. Fair's Veterinary Hospital especially for this book.)

BREAKING, TRAINING AND HANDLING HORSES.

(Including Their Feeding and Care.)

BREAKING AND TRAINING.—The most successful horse breakers and trainers are level-headed, good-natured and thoughtful men and they make a study of every particular colt or horse that comes under their care for instruction. They believe in subduing the animal by kindness rather than by force; they also know that it is important to teach certain lessons first, also to get on good terms with the animal.

THE FIRST LESSON.—In order that the work may be accomplished easily a colt should be halter broke when it is a few days old, or not allowed to go longer than two or three weeks. Put a halter on the colt and lead the mare and the colt with her. Lead the colt short distances to and from the mare and also in a circle within her view. Teach him the word to stop and start, lift up his feet, open his mouth, avoid frightening him, don't use the whip as it is unnecessary. Handle him often enough so that he will not forget his lessons or acquaintance with you. When halter breaking him teach him to stand tied and be sure to use a halter that he cannot break, for if he learns the habit of breaking loose he soon becomes a halter puller. It is not a bad plan to tie the halter strap to the collar of his mother's harness; this teaches him to walk with her and also to start and to stop when the words are spoken to her. The older and stronger a colt is when you attempt to halter break him, the more force must be used; besides, it takes more time and he is more likely to get hurt.

BITTING A COLT.—This is one of the most important parts of his education, for if he is bitted properly he will drive kindly all his life; therefore, plenty of time should be given to this part of his education. A bridle with a smooth bar or snaffle bit should be placed in his mouth, not too high up, and should be left on him several hours a day before he is reined up. As soon as he does not fight the bit it will do to drive him with a harness and teach him to be guided with the lines. After he has become accustomed to this sort of work hitch him to a break cart and be sure to put on a kicking strap. The harness and cart should be strong enough so that it will not break if he plunges or stumbles or attempts to run away. A hopple on one foot with a rope attached to it, held in the hand of an assistant, will prevent his running away. The length of time it takes to teach him to drive kindly in harness depends very much upon how thorough his former training has been, but if he is nicely bitted and obeys the word it will not take more than a few days; however, the colt should be driven slowly several miles every day until he is thoroughly broken. It is always a mistake to commence the education of a colt and then not continue it daily until completed.

HOW TO SADDLE BREAK A COLT.—First of all, let him wear either a saddle or a dummy with a biting rig, then he becomes accustomed to something on his back. If necessary dress up a dummy man or woman, put it on his back and lead him around for a few days until he becomes accus-

tomed to the sight of a person on his back; then, when he becomes quiet and appears to pay no attention to the dummy, a light person can safely ride him. Many colts are frightened when a person attempts to mount them; this is for want of proper lessons in the stall where they should all be given to understand they are not going to be hurt. Another mistake that is frequently made when teaching a colt to ride is the rider's using spurs instead of the words or a gentle tap with the whip. When first mounting a colt outdoors, have him hitched to a post and get off and on frequently until he understands that he should stand still until you are safely seated.

EDUCATING HORSES.—When we consider what remarkable memories horses possess and what respect they have for man if treated kindly by him, we should not feel discouraged at the simple task of teaching horses to stand without hitching, stop and start when they are told, quicken and slow their gait at the word, go to the right or left when asked and to back when told, without the use of reins. During my younger days when on a stock farm in Canada I broke steers to drive and work and also colts, and since then have owned a great many thousand horses and have used several different ones almost every day of my life. Nearly all of them have a different disposition but by kindness I have managed to control them by word. An animal should be talked to but not foolishly. Say to them what you want them to do, show them how, then it is only a question of a sufficient number of lessons when they will do what they are told. I have owned horses that could be driven with perfect safety through the streets of a city without bridle, bit or reins; they were under control and had never been misused or abused. I know hundreds of teamsters that are on good terms with their horses all the time and it seems a pleasure for their horses to obey their commands. I had the pleasure of stabling at my hospital the wonderful, educated horse "Jim Key." During the two weeks that the horse was under my care I was afforded a splendid opportunity to study and test his intelligence. Dr. Key, who raised and educated him, told me that it required some five or six years to teach him what he knew; it was all done by kindness and patience. The doctor built on his farm in Tennessee a large school room and allowed no one else to even feed or attempt to instruct the horse. In educating animals the teacher must be thoughtful, intelligent and kind or he will prove a failure in this line of work.

HOW TO SUBDUE VICIOUS HORSES.—The different professional horse trainers and tamers who were the most successful in handling vicious horses did so by firmness and kindness, but usually they did it by different methods of restraint, such as using bits and roping them and casting them frequently until the animal became subdued, then the trainer resorted to strategy and kindness. Nearly all the readers of this book must have heard of the Rarey and Gleason methods of restraint and education of vicious and tricky horses. They applied a bridle that would stay on, used different kinds of bits for different animals and had a very simple method of throwing them, but their plan was to keep right at an animal until the brute weakened and surrendered to them, then they took him step by step until the animal understood that the trainer was not going to hurt him, and I might say right here that a timid, cowardly person is wholly unfit to handle and subdue vicious, willful horses. In handling a vicious horse the trainer must possess marked intuitiveness and be able to interpret the thoughts of the horse. Further, he must use methods of control which protect himself against injury. If the

horse has not first been subdued and is well under control he should be hitched to a cart that he cannot easily break. Just think how many years Rarey, Gleason and others were engaged in this most hazardous business and they were seldom hurt. If handling a colt that is not halter broke, put him in a small enclosure, bridle him, move him from side to side and around the stall or pen, then throw him down; some time later let him up. This soon quiets the colt's fears and he learns quickly that he is not going to be hurt. Handle him when down, not forgetting to fuss with his head and legs. Let him see a harness and saddle, then move it over his body and legs and continue at this until he becomes familiar with the sight and feeling of the harness. It must be understood when handling vicious horses or breaking colts to lead, drive and ride that they should be given several lessons a day and kept at it until they drive kindly. Now, in taming some ugly colts and horses it is well to strap up one forefoot and make them stand for a time on three legs or hopple the forelegs together above the knee or use trotting or pacing hobbles to prevent their striking, kicking or running away. It is also no bad plan to buckle a strap around the pastern or one forefoot, hitch a rope or strap to it and pass it through a ring fastened to the surcingle or belly girth and then if he attempts to run away you can bring him to grief at once by pulling up on one forefoot and making him stand on three legs. Many a vicious colt has been subdued by making him stand for hours during the day with one foot up but of course letting it down occasionally. A stubborn or sulky dispositioned horse is very often benefited by a few good lashes with a whip that stings, this should be done more with a view of causing pain. However, as I have said before, a whip, if used at all, should be handled by a level headed person for I find that many horses are ruined in disposition and their value depreciated by the reckless use of whips. There should always be the right sort of an understanding between horse and driver and when this exists the work goes on nicely without balking and sulking. A stubborn, sulky horse, when he refuses to pull or to go when told should have his attention called away from his load; this is accomplished in various ways; sometimes a handful of food, a loud noise, a drink of water, a handful of sand placed in the mouth or a little water dropped in the ears will produce the desired results. **Remember, you cannot pound brains into a horse.**

CASTING.—In performing painful surgical operations it is sometimes necessary to cast the horse. This can be done in a great many different ways and it makes little difference which method is employed when throwing young colts or horses, but old horses should be cast with caution for fear of fracturing their backs. It always makes a difference which method is to be used according to what sort of an operation is to be performed. For castration the side-line is the least expensive and most convenient method. This consists in using a long piece of rope with a loop in the center which is used for a collar, passing the two ends down between the forelegs and either round the back part of the pastern or through the eye of a hopple, then passing it on the outside of body through the loop. Assistants should be at the head of the animal and one or two pulling on each rope soon puts the colt down, then he is tied by one-half hitches over both hind and forefeet. Another common method is hobbles, which consists in placing one hopple round each pastern then commencing at one fore quarter, passing the rope through hopple eye of each hopple, then pulling the forefeet together until the horse falls. An assistant should be stationed at the head. Another simple method

is tying up one forefoot, passing a strap around pastern of opposite forefoot, then pulling up the foot. The horse, dropping on his knees, soon gets tired of this position and lies down. When on his knees, the halter strap should be passed along the opposite side of the neck over the shoulder and pulled firmly until the nose is pulled around on neck or shoulder and if held in this position for a short time he is inclined to roll over toward you. This is a one-man method employed by Mr. Magner. The Rarey method differs by pulling up the opposite hind foot as well as the opposite forefoot and when this is done it is convenient to use a surcingle with ring to pull straps through. There are many other methods which are equally simple and about as effectual. However, space will not permit of my mentioning more.

KICKING IN HARNESS.—This is a habit or vice that is usually the result of poor horsemanship, improper breaking of colts or allowing horses to remain idle so long that they become playful and foolish, commencing the habit and apparently forgetting to discontinue it. I can safely say that many colts are not bitted properly and accustomed to the harness before they are hitched to a wagon and it is not surprising that some of the high-lifed or sulky, bad tempered colts or horses should take to kicking when in harness. There is another kind; namely, nervous ticklish animals that are allowed to go with their head down low and when frightened or startled commence kicking.

REMEDY.—In my judgment there would be few kickers if colts were handled young, bitted properly and driven about with the lines before they are hitched to a vehicle. When hitched they should be hooked to a cart and a kicking strap applied to prevent their kicking. After a thorough education of this kind and at the same time checking the head up reasonably high to prevent the raising of the hind quarters very high, few horses would attempt to kick in double harness. Most kickers that kick in single harness have first contracted the habit when double or when hitched to a cart without kicking strap or to a cart that was too light and broke to pieces when the colt ran away. It is time well spent to bit a colt a few weeks before you attempt to drive him single or double. Colts very often break in very easily if first driven with their mother while they are young and I might add that every colt should be broken when he is a year old or younger. By doing this fewer accidents happen and less force has to be used. Besides, much valuable time is saved for a young colt breaks more easily than an old one.

KICKING WHILE EATING GRAIN—KICKING IN STALL.—This is a habit that is contracted from the animal's being overfed and under exercised; also, nervous horses seem to soon pick up the habit from the horse in the next stall so that it is not unusual to find several idle horses kicking, one after the other, or several at the same time. Horses kept in single stalls are most likely to kick the stall and kick while eating grain.

REMEDY.—Give the animal plenty of exercise or moderate work; buckle or fasten a strap around each pastern of the hind leg attaching to it twelve or fourteen inches of chain; or, harness him with either trotting or pacing hobbles. Hoppling the hind legs together twelve or fourteen inches apart, with hopple applied above hock, works fairly well and very often shifting a stall kicker to a different part of the stable where he will have quieter associates seems to have a good effect. It is not unusual to find mares kicking the stall while in heat, if they are teased by their neighbor. I have

known mares that were inveterate kickers, the result of disease or an abnormal condition of the generative organs. In these cases spaying is the only successful remedy.

BALKING.—Balking is when a horse refuses to go when told or urged to do so. There are two general causes; namely, exciting and predisposing. The exciting causes are decidedly numerous—yes, there are hundreds of them, while the predisposing causes are perhaps few. However, the two causes are many times closely associated, as for instance a quick, high-lifed, nervous, energetic colt in the hands of a nervous, excitable, poor horseman; and attempting to use the colt for slow heavy work is very likely to fret and discourage both colt and driver. Besides, over-loading young uneducated horses during the muddy or snowy season and pulling this heavy load up hill, especially if the haul is long, is quite likely to make a balky colt. Using harsh bits that make the mouth sore, using bad-fitting collars that hurt the shoulders, working a spirited horse with a lazy sluggish one, reining the head up too high and jerking and abusing a willing, true puller, have a tendency to discourage him and make him balky. Punishing a horse when he is unable to pull the load and whipping him when he is doing his best are always remembered. Horses have great memories. I have no hesitation in saying that for want of knowledge, a level head and a smooth temper drivers are responsible for spoiling the disposition and discouraging nearly every balky horse. An excitable horse should not be driven or worked by an excitable person. Light driving and road work should be done with light horses.

REMEDY.—Ascertain the cause and when a horse balks attract his attention away from what he is thinking about but treat him kindly. Coax him into pulling the load or starting on his journey. Place some sand in his mouth or drop a little water in his ears. Place a twitch on either lip or ear and he may pull. Or, tie a rope around his flank, hitch it to his mate and when he goes the balky fellow is likely to follow. There are hundreds of ways of controlling a balky horse, but kindness and strategy on the part of the driver overcome every balky horse or mule.

CRIB BITING—WIND SUCKING.—This is not a disease, but a vice or a bad habit, perhaps the result of indigestion, pain in the jaw or teeth, but the greatest number of cases I have traced have been contracted by imitation when the animal was idle. Wind sucking is usually the result of crib biting after it has been kept up for a certain length of time. The swallowing of air is accomplished by the animal's taking hold of some hard substance, then dropping the neck and allowing air to fill a vacuum in the pharynx. This air later passes into the stomach and on into the bowels.

TREATMENT.—Put the horse in a box stall or a stall with smooth partitions and without any manger and oblige him to eat out of an oval-shaped cement or metal box resting on the floor. If he sucks wind wear a muzzle on him when he is not eating. Mangers covered with metal or smeared with offensive drugs, such as aloes, coal-tar disinfectants or red pepper have a tendency to prevent their cribbing. In pure wind suckers a strap may be tied tightly around the upper part of the neck. This will prevent the horse filling himself with air. However, I have known horses to become roarers from wearing a strap buckled tightly around their neck to prevent wind sucking.

HALTER BREAKING AND HALTER PULLING.—When colts are

a few weeks old and before they get strong every one of them should be halter broken and this is most easily accomplished when the colt is first led with its mother. The second lesson should be by leading the colt in a circle within sight of its mother, either in a stall or paddock and I have always thought it was a mistake to be in a hurry and try to teach the colt too much in a minute. However, a colt can be halter broken in two or three days so that he can be led about like an old horse if good judgment is used on the part of the teacher. Older colts require more time to teach to lead, but whenever they are taken in hand the work should be persisted in until the ends are accomplished. Halter pullers are usually made by using halters that are easily broken. The habit is usually acquired through fright and the careless tying of young horses or colts. I have found it a good plan to use a strong, well fitting halter and to tie them short and high up, as this gives the horse less power to break loose. Another plan is to use a long rope, passing it around the body at the flanks with a slip knot, passing it under or alongside of the body through a ring in surcingle and up through a halter or neck strap and then hitching it to the manger or a post, and then after the colt makes a few attempts to break loose he will give it up as a bad job and perhaps discontinue the habit. However, it is not a good plan to take this rope off too soon. Another plan is to buckle a hopple around the foreleg either above or below the knee, slide this through a neck strap or halter and hitch him to the manger or post and he will not break loose.

EXAMINATION FOR SOUNDNESS.—In buying a horse it is well to know whether he is sound or unsound for if not sound his value must depreciate. In order to tell whether he is sound or not, you must be thorough and keep in mind the necessity of looking him all over. Watch him closely in the stable—he may crib bite or have some vice or may point a foot or rest one leg. He may come out of the stall lame but the lameness may soon disappear. Trot him on hard footing, examine his eyes closely, look at his mouth to see how old he is, pick up his feet, watch his breathing, look into his mouth for diseased teeth, test his wind by giving him a brisk gallop, back him out of the stall and watch for stringhalt and chorea, see that his feet are of even size and that he has no thrush. Tap his feet for corns and tender spots, look into his nostrils and examine the eyes closely to see that they are alike. Go over every part of the body carefully. See that there are no splints, ring-bones, spavins, curbs, bog-spavins or thoroughpins. Stand him on a level floor or piece of ground, then step to one side and notice if he is knee sprung. Also stand behind him and observe whether his hips are alike. Notice if his respiration is normal, also use enough pressure on the throat to make him cough. If he has a moist cough think little about it, but if he has a harsh, dry, hacking cough it is perhaps chronic and possibly bad enough to condemn him. Trot him both to and from you on hard footing, letting him have the free use of his head; also trot him in a circle for some horses will show lameness only when turning. If you are buying him for work, insist on seeing him hitched and test his pulling qualities. It is well to notice whether the mane is roughened from wearing a collar, also look for harness marks. It is always suspicious to find no evidence of harness marks. If you are going to use him for road work give him a good sharp drive, also be sure to give him a brisk gallop to test his wind.

TEETH AND HOW TO TELL A HORSE'S AGE.—The teeth are, of course, the principal agents used in the process of mastication, besides afford-

ing a means of telling a horse's age. A tooth is divided into three parts—crown, neck and fang and is formed of three substances—enamel, dentine and crusta petrosa. There is a cavity in the fang called the pulp cavity, extending up into the neck. This cavity is largely supplied with fibers and blood vessels, also with nerves. This cavity, however, disappears as the animal grows older. It is surrounded with nearly thirty per cent. of animal matter and about seventy per cent. of earthy matter. This accounts for the teeth being harder than bone. Dentine develops from the pulp, but in very old animals the teeth are composed entirely of earthy material and, I might add, are the hardest material of the body. The teeth are of three classes. Incisors, tusks or canine teeth, and molars or grinders. The teeth in the upper jaw are always wider than in the lower. The horse is provided with temporary teeth at first and later with permanent teeth, having twenty-four temporary, twelve molars and twelve incisors. He has forty permanent teeth. On the table or wearing surface of the incisors there are cavities and these cavities form the best means of telling a horse's age. The temporary teeth are white, have a well marked neck, and are narrow; while the permanent teeth are always darker in color and wider; besides, as they wear down they become more upright. When a colt is foaled it usually has four front teeth—two above and two below. However, if they are not seen at birth they usually appear in ten or twenty days. From four to six weeks later four more appear close to the others and some six months later the other four corner teeth appear, making six above and six below, and this is the full set of incisor teeth. The only change that takes place up to two and one-half years is that the surface of the teeth become smoother. Now between two and a half and three years the four temporary teeth are shed and permanent ones take their place, and when from three to four years old, the four central incisors are shed and from four and a half to five years old the corner incisor teeth are shed and the permanent ones take their place. Sometimes a horse will have a full mouth when four and a half years old. The mouth of a two-year old resembles somewhat that of a five-year old. However, the teeth of the two-year old are always whiter and narrower and a two-year old never has bridle teeth. The foal at birth usually has twelve temporary molars. The first permanent grinder teeth appear when the colt is about twelve or thirteen months old. The next appear six or eight months later and at about three and half years old the fifth appears taking its place third in the jaw and very soon afterwards the sixth appears, and when four years old the colt has a full set of permanent molar teeth. The bridle teeth appear between four and five years old then the horse has a complete set of permanent teeth. At the age of six years the marks in the central lower incisors are pretty well gone, at seven the central lower, at eight the surface of the lower row of nippers is almost perfectly smooth and there is a small hook on each of the upper corner incisors. At nine years the mark is worn out of the two central upper teeth, at ten it is out of the next ones and at eleven the upper row of teeth is worn smooth. After this the incisors begin to project forward, become narrower from side to side and broaden from the four back ones and are almost round at the age of twelve. At thirteen years of age the central lower nippers are nearly round and at fourteen years nearly all the incisors of the lower jaw are round. When fifteen years old the central upper nippers are almost round, in fact all the upper nippers have assumed that shape. At sixteen years the middle ones are nearly round, measuring

but little more in depth than they do in breadth. Now, at seventeen years of age the incisors of the upper jaw have become almost round. However, the middle teeth are a little deeper than they are broad. At eighteen years the lower incisors become a little more triangular in shape and somewhat deeper than they are wide. At nineteen years we find the middle teeth of the lower jaw triangular in shape and not quite so wide, but perhaps a little deeper, and at twenty years the whole six lower incisor teeth have become triangular in shape. Besides, they are usually somewhat irregular.

PROPER FOOD AND FEEDING.--In feeding animals, especially the young, it must be remembered that milk that comes from the mother is a balanced ration and if the young colt has plenty of it and meets with no mishap or sickness he grows evenly and every part of the body seems to be nourished properly. Then after weaning time, the diet must be of such a nature as to take the place of milk. Colts or calves should be fed some ground oats while sucking the mother so that when weaned they will eat hay, grass, grain, vegetables and fodder. If left to their own choice, where they have access to a variety of food stuffs it is astonishing to see them nibbling a little of them all. This is a hint to us to supply their wants, for while they are making their own selections their entire body is growing not only rapidly but evenly. Growing young stock are not always fed a sufficient quantity of nutritious food to keep them growing; besides, too many of them are fed the same kind of food during the entire winter months and nothing but grass during the summer season and of course this is a mistake. The common food for horses in this country and Canada is hay, straw, corn-fodder, grass, roots, oats, corn and rye but in some other countries they are fed on much the same kind of food that man eats and I am told they thrive on it. In the selection of food for horses it should be of good quality and not too bulky, for the stomach of a horse is small, hence the necessity of supplying him with grain as well as fodder if he is working. Hay, straw and corn-fodder should be fed first for it passes out of the stomach more quickly than grain and if hay or fodder is fed last some of the grain must leave with it instead of remaining in the stomach to be digested. Furthermore, a horse should be watered before he is fed grain for fear that the water will wash the grain into the bowel before it has been properly digested. If hungry horses are fed bulky food first, they eat it slower than if fed grain and it does them more good, and feeding this way also prevents their swallowing the grain whole. Indigestion is very often the result of feeding tired, exhausted horses too soon after their day's work is over especially if they are fed cut feed and chopped feed that has much corn mixed with it. Of course it may do but little harm when fed in cold weather but during hot sultry weather it usually disturbs digestion, ending sometimes in death. Too sudden a change of diet is somewhat dangerous if a large quantity of rich nutritious food is supplied to an animal unaccustomed to it.

PROPER SHOEING.

These rules are recommended by the Instructors of the United States Government Training School for Farriers and Horseshoers at Fort Riley, Kansas.

The following rules may serve as a guide for the shoeing of healthy feet:

1. The wall, being the weight bearer, should be rasped perfectly level

or the foot will be thrown out of its true position, causing extra strain on some of the ligaments.

2. Fit the shoe accurately to the outline of the foot; do not alter the latter to fit the shoe. Rasping away the exterior of the crust to fit the shoe not only renders the horn brittle but is so much loss of bearing surface.

3. The sole should not be touched with the knife; loose flakes may be removed with a blunt instrument.

4. The bars should not be cut away; they are a part of the wall and are intended to carry weight. The shoe should rest on them.

5. The frog should not be cut, but left to attain its full growth. No frog can perform its functions unless on a level with the ground surface of the shoe.

6. The shoe should have a true and level bearing and rest well and firmly on the wall and bars. A plain light-weight shoe is the best—plain on both ground and foot surface.

7. High nailing is injurious; do not use any more nails than are absolutely necessary, as the nails destroy the horn.

STABLE MANAGEMENT OF THE SICK AND INJURED.

(In treating of the management and care of sick and injured horses we will quote largely from the instructors of the Government Training School.)

Care of the Sick.

The sick horse should, if practicable, be immediately removed to a large, clean, light and well ventilated box stall, free from drafts and located as far as possible from other horses. Clean bedding should be provided, and the stall kept free from manure and moisture. If such a stall can not be provided a double stall, with the kicking bar removed and ropes or bars placed across the front of it, will answer the purpose.

If the patient is suffering from a febrile disease (fever) during the cold season of the year, paulins or horse covers can be hung up in such a manner as to serve as a protection from drafts, care being taken to allow sufficient air to enter this improvised box stall. Such patients must be clothed according to the season of the year, the blanket drawn well forward on the neck and fastened in front, the legs, after hand-rubbing, bandaged with flannels. The bandages should be changed several times daily and the legs thoroughly rubbed to stimulate circulation.

Horses with diseases of the nervous system require to be kept absolutely quiet, and must be removed as far as possible from all noise. It is preferable that only one man be allowed to attend to their wants, as a change of attendants would very likely cause excitement and thus increase the severity of the disease. Animals suffering from debilitating diseases should be tempted with and fed any food that is rich in nourishment and easily digested. Salt should frequently be added. The food, etc., should be given only in such quantities as the animal will readily eat, and any portion left over should be at once removed, as food constantly remaining before a sick animal will have a tendency to deprive it of all appetite. Food that is wet, such as bran mash or steamed oats, will soon sour in warm weather and will

get cold or may freeze during the winter; if eaten in these conditions it may cause diarrhea, colic, etc. Feed boxes, water buckets, and all parts of the stall must be kept clean and free from odor. The hay should be clean and bright, and only the best given to the sick animal. Pure water should be provided and placed in such a position as to enable the animal to reach it without difficulty; a sick horse will frequently rinse the lips and mouth with water if given the opportunity, even when not thirsty. The water should be changed as often as necessary during the day to insure a pure and fresh supply at all times.

A horse suffering from colic requires sufficient space, well bedded, to prevent injuring himself by rolling over during a spasm of pain. A man should be constantly in attendance, as there is danger that the animal may become cast and be unable to get up without assistance.

Undigested matter being the exciting cause in almost all cases of colic, food should be withheld for about twelve hours after all pain has disappeared, and then given only in small quantities during the next twenty-four hours, after which the ordinary ration may be resumed. A few swallows of pure water may be given at short intervals, but special care must be taken when the water is very cold.

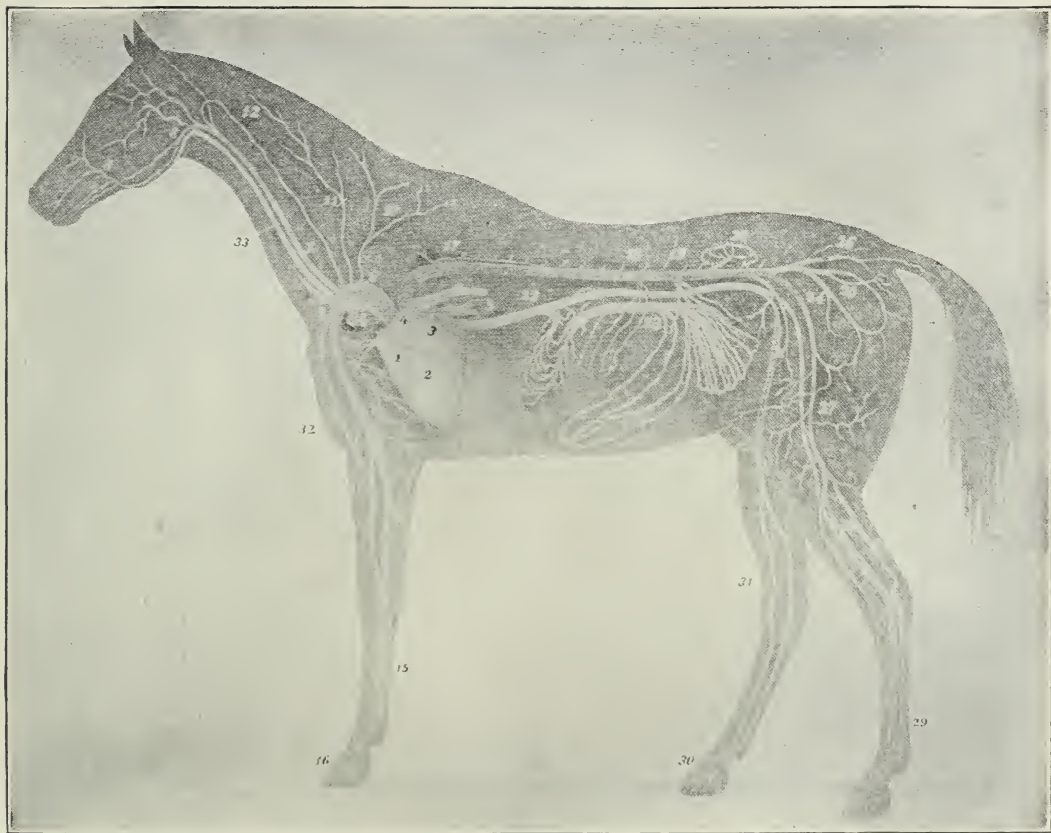
The pulse is the beating of the arteries, usually felt at the jaw (the submaxillary artery), and is an important guide in determining the physical condition of the animal; the normal pulsations are about 40 per minute. The count is best taken by placing the fore or middle finger transversely on the artery. The slightest excitement, when the horse is sick, will cause an alteration in the pulse, therefore the animal should be approached very quietly. A strong and full pulse is an indication of health.

In the first stages of fever the pulse is full and bounding, afterwards becoming small and weak. A very slow pulse denotes disease or injury of the brain or spinal cord. An imperceptible pulse indicates the approach of death.

At rest the healthy horse breathes from 13 to 15 times per minute. Difficult or rapid breathing is a prominent symptom of disease of the respiratory organs; it may also be observed in some cases of flatulent colic. Abdominal breathing is the respiratory movement performed with the ribs fixed as much as possible, owing to pain or mechanical obstruction in the chest, and is a symptom of pleurisy and hydrothorax (water in the chest).

Irregular breathing is that condition where there is a want of harmonious correspondence between the inspiratory and expiratory movements, and is observed in the disease commonly known as "broken wind" or "heaves." The inspiratory movement in this affection is performed quickly and with a jerky effort, while the expiratory movement is performed slowly and with a double action, more particularly of the abdominal muscles. Irregular breathing often becomes spasmodic or convulsive during the progress of the disease. The condition and color of the visible mucous membranes should be closely observed; as will be learned in detail later, they are an important guide in determining the physical condition of the animal.

The normal temperature of the horse in the internal part which is most easily accessible, the rectum, may be estimated at from 99 degrees to 101 degrees F. In very young animals the temperature is commonly about 101 degrees, but in very old ones it has been known to be as low as 96 degrees F. The temperature of the external parts of the body becomes lower according



CIRCULATORY APPARATUS OF THE HORSE.

- | | |
|----------------------------------|---|
| 1. Heart (right ventricle). | 18. Branches distributed to the stomach, spleen, pancreas, etc. |
| 2. Heart (left ventricle). | 19. Branches distributed to the intestines. |
| 3. Heart (left auricle). | 20. Branch to the kidneys. |
| 3a. Heart (right auricle). | 22. Posterior vena cava. |
| 4. Pulmonary arteries (cut off). | 24. External iliac artery. |
| 5. Pulmonary veins (cut off). | 25. Internal iliac artery. |
| 6. Anterior aorta. | 27. Femoral artery. |
| 7. Common carotid artery. | 28. Posterior tibial artery. |
| 9. Left brachial artery. | 29. Metatarsal artery. |
| 13. Humeral artery. | 30. Venous network of the foot. |
| 14. Radial artery. | 33. Jugular vein. |
| 15. Metacarpal artery. | 34. Anterior vena cava. |
| 16. Digital artery. | |
| 17. Posterior aorta. | |

to their distance from the heart, and liable to much variation from the state of the surrounding atmosphere. Fever is an elevation of temperature.

The production of animal heat is due to certain chemical and vital changes which are continually taking place in the body; these changes consist in the absorption of oxygen by the capillaries in the lungs, and the combination of that oxygen with the carbon and hydrogen derived (first) from the disintegration of animal tissues and (second) from certain elements of the food which have not been converted into tissue.

This combination with oxygen, or oxidation, not only takes place in the blood, which may be looked upon as a fluid tissue, but in the tissue cells also, in all parts of the body, the animal heat being maintained by the natural changes which are essential to a healthy condition.

As previously stated, oxygen is absorbed from the air by the capillaries of the lungs in respiration (breathing). Expired air is found to have lost about 10 per cent. of the oxygen contained in pure air, and to have accumulated a like amount of a combination of carbon and oxygen, called carbonic acid gas. If we imagine the animal breathing and rebreathing the same air, it can be seen that the oxygen, so necessary for the purification of the blood, would soon diminish to a dangerous degree. Hence, we realize the importance of a large supply of air to draw on and the necessity of good ventilation. At each inspiration the horse draws about 250 cubic inches of air into the lungs, and he therefore requires about 2 cubic feet per minute, or 120 per hour. It is customary, in building ordinary stables, to allow 1,600 cubic feet of air space (over twelve hour's supply) for each animal, and to provide means of admitting fresh air without causing drafts. In infirmary stables the allowance is increased to 1,900 cubic feet.

Without good air the blood is imperfectly purified, the vitality of the animal is lessened, he is more susceptible to disease, and will succumb more easily when attacked; consequently, horses should never be kept in the vicinity of a marsh, the air from which contains an excess of carbonic acid gas and a diminished supply of the necessary oxygen.

Care of the Injured.

If the horse is seriously injured and stands with difficulty, he should be placed in slings (See Plate) to partially support the weight of the body. The slings must be properly adjusted, fitting closely behind the elbows in such a manner as to support the weight of the body on the chest and not on the abdomen. This position is maintained by the use of the breast piece and breeching, which prevent the shifting of the sling. A single stall, having a level floor, free from bedding, is more suitable than one allowing more motion to the animal.

If the horse is but slightly injured, there is no necessity of placing him in slings. An ordinary stall with a level floor is all that is required. After the injury has been dressed he should be allowed to stand without being disturbed. If very lame, and movement is painful, the more quiet he is kept the more quickly will recovery take place. Absolute rest and perfect quietude are two very essential things, and when secured they will hasten the process of recovery without inflicting unnecessary pain upon the animal. In some surgical cases it is necessary to restrain the animal so that he can not injure himself by rubbing or biting the affected parts. This can be accomplished by tying up the head or by the application of side lines. Bandages may be

applied to the legs of animals for different purposes—First, to give support to the blood vessels and synovial bursæ; second, to dry and warm the legs; third, to support packs used in applying hot and cold lotions; and fourth, when conditions are favorable, to check hemorrhages.

Food and Drinks for Sick Horses.

Water Supply.—However harmless impure water may have been to animals in a wild state, the more we subject them to an artificial existence the more we remove them from the immunity they may have possessed against common causes of disease and the greater liability is there for the development of diseases which originally may never have existed. In other words, the domesticated animals should always have pure water; when the vitality is further reduced by sickness the necessity of absolute purity is even more imperative.

Hay Tea.—Fill a tub with a good quality of hay, pack it down closely and cover it with boiling water, then cover the tub and keep it in a warm place for fifteen or twenty minutes and if the water evaporates add some more cold water. Hay tea is refreshing to a horse.

How to Make Gruel.—Stir either a quart of corn meal or oat meal into a gallon and a half or two gallons of cold water, allowing it to stand for an hour or two, then give it as a drink.

How to Make Bran Mash.—Take four or five quarts of fresh bran, add a tablespoonful or two of salt, pour on boiling water until the bran is covered with the water then cover with a cloth to keep in the steam and surround the bucket with some straw or cloth to keep it warm or place it in a warm room and allow it to stand for two hours. If the horse is not inclined to eat it add a few oats. This is a very good meal for heavy work horses, Wednesday and Sunday evenings, to keep the bowels open.

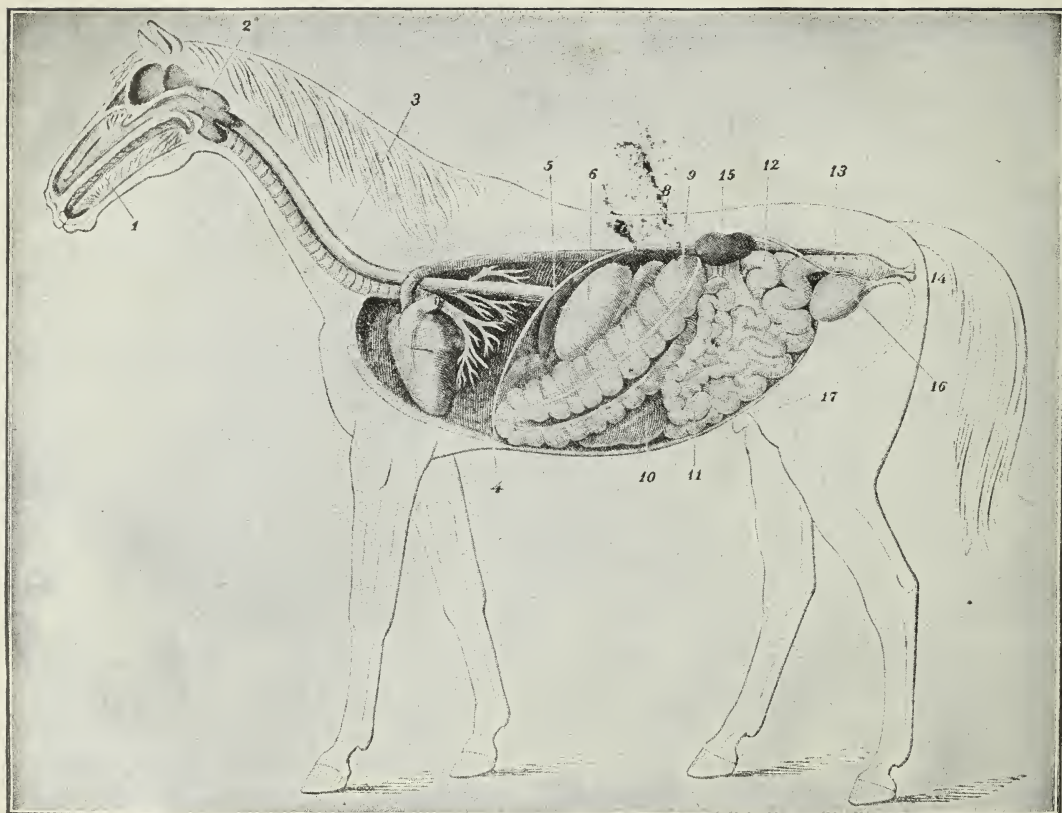
How to Give a Horse Medicine.

Medicine is given to a horse most conveniently in feed, or with a syringe, or as a drench out of a wine or whiskey bottle. The head is easily held up by fastening a strap or rope in the nose piece of the halter, then passing through a ring or pulley or over a beam. Pour the contents of the bottle slowly into the mouth, but never pull out the tongue or pinch the throat. It is a mistake to hold the head too high and decidedly dangerous to drench a horse through the nose. Many times it becomes necessary to give medicine by injecting it into the bowel or to give it with a hypodermic syringe. Medicine can be easily given to a horse in pill or bolus form and balling guns are useful for this purpose but the pill or bolus may be given by taking hold of the tongue with the left hand, pulling it well forward, keeping the mouth open with the same hand and then placing the ball well back in the mouth and letting go of the tongue after the right hand is withdrawn. Medicine in powder form, when not irritating or caustic in its action, can be given with a spoon when the tongue is pulled forward with the left hand and mouth kept open with closed hand.



DR. FAIR GIVING A HORSE MEDICINE WITH A SYRINGE.

This is a valuable draft horse, owned by the American Steel and Wire Company, being treated for a chronic cough.
Dr. Fair is Veterinarian for the above company. Note how the syringe is held in the hand.
(Photographed especially for this book.)



DIGESTIVE APPARATUS OF THE HORSE.

- | | | |
|------------------------|----------------------------|---------------------------------|
| 1. Mouth. | 8. Liver, upper extremity. | 14. Anus. |
| 2. Pharynx. | 9. Large colon. | 15. Left kidney and its ureter. |
| 3. Esophagus. | 10. Cæcum. | 16. Bladder. |
| 4. Diaphragm. | 11. Small intestines. | 17. Urethra. |
| 5. Spleen. | 12. Floating colon. | |
| 6. Stomach (left sac). | 13. Rectum. | |

DISEASES OF THE DIGESTIVE ORGANS.

(Including Diseases of the Mouth, Stomach, Bowels, Liver, Etc.)

INDIGESTION.—A simple functional derangement of the digestive system is very common in animals, especially the horse which has a small stomach.

CAUSES.—Simple indigestion is very often brought on by eating too much bulky food of poor quality. Of course it is true that digestion in the horse goes on rapidly for if it did not, with so small a stomach in proportion to the size of his body, the horse would suffer more from indigestion than he does. Sharp uneven teeth, causing the horse to improperly masticate his food, is another cause of indigestion.

SYMPTOMS.—The animal usually falls off in condition and becomes somewhat emaciated. His coat looks rough and he presents an unthrifty appearance. The bowel movements are often irregular. He may show some abdominal pain and instead of losing his appetite he will often eat filthy things with apparent relish and he very often licks the wall, hunting for lime or salt.

TREATMENT.—There may be an over acidity of the stomach and if so the horse will of course be fond of lime or salt. Many home remedies help this kind of cases. Salt, lime and very often a small dose of calomel and a moderate dose of aloes, or epsom salts, or baking soda and charcoal can be given with benefit. A little bit later give quinine, gentian, quassia, sulphate of iron or charcoal. If the animal shows much weakness give stimulants. Float the teeth if they need it, exercise the horse regularly and be sure to change the feed.

PEOPLE'S HOME REMEDIES FOR INDIGESTION.—

1. **Raw Linseed Oil.**—Drench with a quart of raw linseed oil. This dose may be repeated if necessary.

2. **Soda, Ginger and Gentian.**—Mix equal parts of common baking soda, powdered ginger and powdered gentian and give in tablespoonful doses twice a day one hour before feeding. This is best given by dissolving in half a pint of water and giving as a drench.

3. **Removing Causes.**—If the indigestion is caused by sharp and irregular or decayed teeth they should be rasped down or extracted. If the horse bolts his grain without chewing it properly this can be remedied by feeding in a large manger where the grain can be spread out so that he cannot eat it so fast. If worms are the cause then a dose of one ounce of aloes or a pint of raw linseed oil will prove of service.

CHRONIC INDIGESTION.—This is a weakened condition of the digestive organs.

CAUSES.—This ailment is sometimes associated with functional derangements of the liver and is often brought on by feeding a horse too many oats for too long a time when not exercised.

SYMPTOMS.—An animal may have indigestion and not show symptoms of sickness; however, his general appearance is not good. He is dull and languid, sweats easily and his coat is not glossy. The pulse is too slow,

the membranes yellow, appetite irregular and sometimes there is some diarrhea. There is a desire for salt and an inclination to lick lime and dirt.

TREATMENT.—Find out the cause and remove it. Change the feed, open the bowels and give ginger, soda, charcoal, gentian, cinchona, or any home digestive remedy.

ACUTE INDIGESTION.—This is an ailment caused by eating too much of the wrong kind of food, eating it too fast, improperly masticating it and failing to digest it quickly. During hot weather a great many draft horses die of acute indigestion by its producing rupture of the stomach or bowels, or pressure against the diaphragm.

CAUSES.—Perhaps the most common cause is subjecting a horse to hard work or fast driving too soon after eating a hearty meal. Another very common cause is watering horses after they have eaten grain. The following foods seem to be most likely to cause it: wheat, barley, Indian corn and many kinds of green food. Also, the atmosphere seems to exert a peculiar influence in causing acute indigestion. For example, in my practice and at my hospital some days I have had not less than twenty cases and many other days none at all. This, I might say, is the experience of many other veterinarians.

SYMPTOMS.—The animal usually becomes dull and sluggish, soon showing a slight uneasiness, turning the head to one side seemingly suffering more pain. These pains are often spasmodic. However, later they become more continuous and the abdomen enlarges. The eructations of gas or the passage of gas through the rectum are favorable indications. Sometimes there is regurgitation of food, but this will be found in more extreme cases. The animal very often perspires, has slight diarrhea and rolls and tumbles violently. If the anus is reddened much and the pulse is weak and quick it is unfavorable. Also, if the animal staggers or reels or falls back upon his haunches it is an indication that he will not recover.

TREATMENT.—In all cases of acute indigestion the treatment should be prompt to be effective. Give one ounce aromatic spirits of ammonia in one pint of cold water and repeat in thirty minutes; or, give three ounces hypo-sulphite of soda in one pint of water and repeat in one hour. Another remedy is three drams of salicylic acid in one-half pint raw linseed oil and repeated in two hours if necessary. Or, you may give one-half ounce turpentine in twelve ounces raw linseed oil and repeat in one hour if necessary. Give injections, making them of good soap and warm water; a little sweet oil may be added. If, in your judgment, you believe that the gas is increasing and has no means of escape, do not hesitate to tap him, using of course the horse trocar and canula. The trocar used for the horse should be smaller than the one used for the cow. The opening should be made in the right flank between the last rib and the point of the hip. Be sure that your instrument has been boiled or dipped in a two per cent. solution of carbolic acid and water. (See "Tapping for Bloat.")

PEOPLE'S HOME REMEDIES FOR BLOATING.—

1. **Soapy Water.**—If wind is the cause of the bloating, give injections of warm soapy water.

2. **Cayenne Pepper and Ginger.**—Put half an ounce of cayenne pepper and one ounce of ginger into a pint of warm water and give as a drench as quickly as possible.



DR. FAIR TAPPING A HORSE FOR BLOAT OR FLATULENT COLIC.

Be sure to tap a horse in the right flank and a cow in the left flank. Use a much smaller trocar for the horse than for the cow. Dr. Fair was the first veterinarian to successfully puncture horses for this ailment.

(Photographed especially for this book by F. W. Smith, Staff Photographer for the Cleveland Leader.)

3. **Charcoal.**—Charcoal will give relief by absorbing the gas. Any amount may be given.

4. **Chloride of Lime.**—One-half ounce of chloride of lime will cure bloating.

5. **Carbonate of Ammonia.**—Give one to two drams of carbonate of ammonia.

6. **Linseed Oil or Aloes.**—Give from a pint to a quart of raw linseed oil or from one-half to an ounce of aloes. Either of these will unload the stomach and bowels.

PUNCTURING TO RELIEVE BLOAT—TAPPING THE LARGE BOWEL.—Tapping is a surgical operation that I have been performing successfully for thirty-four years and, so far as I can learn, the puncturing of horses to relieve flatulence had never been done successfully prior to this date. This discovery grew out of the fact that I was losing so many valuable horses from acute indigestion and feeling so badly over the death of one or more horses or mules every hot sultry day or evening, caused me to have a long, small trocar made and, to my surprise, three out of the first five cases I punctured made splendid recoveries and had I not so long delayed operating on the other two I am inclined to believe they might also have recovered. Never use a large trocar on horses for the operation is likely to prove fatal as it makes too large a wound or opening in the bowel. Besides, there is greater danger of hemorrhage. When it becomes necessary to puncture, the operation should not be put off too long, but should be performed while the animal is strong and before rupture has taken place. The trocar should not be used until the flank becomes drum-like and before doing so the skin should be washed clean with soap and water, then with alcohol or peroxide-hydrogen or any other good antiseptic. The operation is usually performed on the right side of the animal, but may be done on the left side in cases where the left flank is badly distended. The skin should first be cut with the lancet or a sharp, clean knife. This is done for the purpose of facilitating the entrance of the trocar and canula, but before the trocar is used it should be boiled in hot water for ten minutes or dipped in carbolic acid water, one part to thirty. The direction should be downward and inward. After pulling out the trocar if no gas comes through the canula you must not be discouraged but should puncture him again. After the gas has all escaped the canula may be withdrawn and the wound usually heals by first intention. However, in some cases an abscess forms which should be treated as if it occurred on any other part of the body. It is a good symptom when pure gas comes through the canula and an unfavorable one if fluid passes, as this indicates inflammation of the bowels. But I have known scores of recoveries to take place even when this dark fluid escaped at the time of puncturing. After the operation a dose of laxative medicine may be given. The animal should be kept on a light diet for a few days and allowed to rest as this is of assistance in bringing about a permanent recovery. Every horse owner should keep on hand an instrument of this kind and should not hesitate to use it before it is too late, making the opening on the right side at the most prominent and distended point in the right flank, which is usually in the triangle between the hip and ribs.

DEPRAVED APPETITE.—(See "Cattle Department.")

FLATULENT OR WIND COLIC.—Flatulent colic consists in a generation of gases in the stomach and large intestines the same as in acute in-

digestion. The same treatment will answer very well in either case. Therefore, the reader is referred to "acute indigestion," where the causes, symptoms and treatment are given. As there stated, treatment should be quite prompt. Energetic, diffusible stimulants such as 1 ounce sulphuric ether; aromatic spirits of ammonia, 1 to two-ounce doses; or a dessert spoonful of turpentine should be given. Repeat every 2 hours until relief is obtained. Also give enemias of warm water with a small quantity of salt added. I have seen excellent results from the use of tobacco injection. After every attack of flatulent colic the animal should be kept on a light diet for two or three days and the stomach and bowels should be cleaned out with a dose of 1 ounce aloes, 1 quart raw linseed oil, or 1 pound epsom salts. Tapping may be necessary.

PEOPLE'S HOME REMEDIES FOR FLATULENT OR WIND COLIC.

1. **Red Pepper Tea.**—Give a quart of strong red pepper tea while warm and follow in an hour with a pint of raw linseed oil.

2. **Whiskey and Soda.**—Give a teaspoonful of common baking soda in a pint of whiskey. This may be repeated in one hour if necessary.

3. **Lime or Ammonia.**—Give half-ounce doses of chloride of lime every half-hour until relieved. Carbonate of ammonia is also good and may be used in the same dose.

4. **Charcoal.**—Give charcoal every hour in ounce doses to absorb the gas.

5. **Warm Lard.**—Drench the horse with 1 pint of warm lard. This is a remedy that is nearly always at hand.

6. **Wild Yam.**—Give 20 drops of wild yam every fifteen to thirty minutes. This should be given in half a pint of warm water.

7. **Aloes, Sweet Oil, Etc.**—Apply blankets wrung out of hot water. Give injections of warm soap suds mixed with 8 ounces of sweet oil. Also give one-half ounce of Barbadoes aloes.

8. **Hop Tea.**—Drench the horse with a quart of strong hop tea and then let him roll or walk him.

9. **Soda and Buttermilk.**—Give a teaspoonful of common baking soda in a quart of buttermilk. May be repeated in half an hour if necessary. The soda should not be added to the buttermilk until just before it is given.

10. **Soda and Ginger.**—Mix a tablespoonful of ginger with a tablespoonful of common baking soda, dissolve in warm water and give as a drench.

11. **Chloroform and Linseed Oil.**—Mix half an ounce of chloroform with a quart of raw linseed oil and give at one dose.

12. **Turpentine and Laudanum.**—Mix 1 ounce of turpentine with two ounces of laudanum and a pint of warm water and give as a dose.

13. **Milk and Ammonia.**—To a pint of sweet milk add a teaspoonful of aqua ammonia and give at one dose.

14. **Laudanum, Ether and Nitre.**—Mix equal parts of laudanum, sulphuric ether and spirits of nitre. The dose is two tablespoonfuls in a pint of water and may be given every hour until relief is obtained.

CRAMPS OR SPASMODIC COLIC.—Spasmodic colic is perhaps one of the most common bowel ailments of the horse. It is known by such names as gripes, cramps, belly-ache, etc. It consists of a spasmodic contraction of the muscular portion of the intestines. It usually affects the small intestines; however the large intestine is sometimes involved.

CAUSES.—Spasmodic colic is often the result of a change of feed from good to an inferior quality. It also follows drinking too much cold water

when in a heated condition, especially if the animal is exhausted. Eating cold or frozen vegetables, sometimes a very small quantity, brings on the attack. A change of temperature from hot to cold and irritating cathartic medicine when not combined with an anodyne to prevent griping are other causes.

SYMPTOMS.—This ailment attacks the animal suddenly. When seemingly in perfect health and while eating food he is seized with pain and turns the head around to the side, switches his tail, paws and kicks, often raising the hind foot toward the abdomen. He cringes down, very often lying down and rolling from side to side and of course must be suffering violent pain. These attacks of pain are usually periodical and soon pass off. During these attacks the pulse quickens but slows when the animal is quiet. The neck of the bladder is usually contracted and the animal is unable to urinate, but after the abdominal pain ceases the animal urinates freely. During these sick spells the ears and legs very often become cold and when rolling he tries to balance upon his back. He generally paws and turns around several times before lying down and he frequently eats hay between the attacks and sometimes the bowels move freely. These attacks usually last from fifteen minutes to ten or fifteen hours. Whenever the pain becomes continuous and the visible mucous membranes become inflamed it indicates inflammation of the bowels.

TREATMENT.—In the treatment of colic it is important to be energetic and to bear in mind that giving twelve or fifteen times as much of any of the common home remedies used for colic in the family is equally proper in the treatment of spasmodic colic in horses. All alcoholic stimulants and anti-spasmodics are proper remedies for this ailment. Among these remedies are sulphuric ether, tincture opium (laudanum), ginger, capsicum, belladonna and nux vomica. If the bowels are costive give a laxative of oil or aloes, with calomel and ginger. It is also well to give injections. Stimulating liniments or mustard applied externally give relief. The animal should be allowed to roll as he pleases. A very common drench is composed of one ounce of sulphuric ether, one ounce of tincture of opium (laudanum), one-half ounce tincture ginger and one dram tincture capsicum in a pint or two of cold water. Repeat this dose in an hour or two if a recovery has not taken place. It is always good practice to give a laxative to clear out the bowels and it is always good judgment to lessen an animal's food supply for twenty-four hours after he has had an attack of colic.

PEOPLE'S HOME REMEDIES FOR CRAMP OR SPASMODIC COLIC.

1. **Whiskey.**—Give half a pint of whiskey in some hot water every hour until relief is obtained.

2. **Soapy Water and Salt Water.**—Give injections of warm soapy water or weak salt water if the horse has spasmodic colic.

3. **Laudanum, Ether and Linseed Oil.**—Give two ounces each of laudanum and sulphuric ether mixed with half a pint of raw linseed oil.

4. **Chloral Hydrate.**—Give an ounce of chloral hydrate in one-half pint of water every two or three hours.

5. **Nitre, Opium and Ginger.**—To half a pint of water add one-half ounce of fluid extract of ginger, one ounce of tincture opium and $1\frac{1}{2}$ ounces of sweet spirits of nitre. This is one dose.

6. **Nitre, Laudanum, Ginger.**—To a pint of lukewarm water add one tablespoonful of ginger and one ounce each of tincture of laudanum and sweet

spirits of nitre. Give this amount every four hours until the horse is better. This is one of the best remedies known for cramp or spasmodic colic.

7. **Asafetida and Ether.**—Mix $1\frac{1}{2}$ ounces of sulphuric ether with 4 ounces of tincture of asafetida. Give one-fourth of this amount in a pint of warm water every twenty minutes until relief is obtained.

GORGED STOMACH—IMPACTION OF THE STOMACH—STOMACH STAGGERS.—When the stomach is overloaded and distended so much that it fails to contract on its contents, we call it gorged stomach. This usually happens to hungry, half-starved, ravenous eaters when they have access to a grain bin or field of grain.

SYMPTOMS.—The animal soon becomes dull and shows distress, keeping the head low. This dullness increases and he usually paws and acts as though he were going to stagger and it is not uncommon for him to become delirious, tremble violently and act wild until he falls. This ailment sometimes reminds one of a horse with mad staggers or vertigo.

TREATMENT.—Give one ounce of aromatic spirits of ammonia, one dram fluid extract nux vomica and three ounces of whiskey in a pint of cold water every hour. Or, give any good home colic mixture. A cathartic of aloes, epsom salts or Glauber's salts should be given immediately. Large doses of ginger and red pepper are good and I have known two tablespoonfuls of turpentine given in one-half pint of either sweet oil or raw linseed oil to act very well. If there is much gas forming give two drams of salicylic acid in a teacupful of warm water every hour until relief is obtained; or, give one ounce of aromatic spirits of ammonia in one pint of cold water every hour until the horse is better.

PEOPLE'S HOME REMEDIES:—For Impaction, Gorged Stomach, or Stomach Staggers.—

1. **Aloes, Cayenne Pepper and Turpentine.**—Give an ounce of Barbadoes aloes as a physic and follow with half an ounce of cayenne pepper or ginger; also, give injections of warm soap suds. This treatment has cured many a horse.

RUPTURE OF THE STOMACH.—Rupture of the stomach is a result of acute indigestion, but I have known it to occur without the bowels being very much affected.

SYMPTOMS.—One of the most prominent symptoms is the animal's attempting to vomit and it very often succeeds when the stomach is ruptured. The heart action is always weak, cold sweats bedew the body, the ears and legs grow cold and the horse sits on his haunches. Rupture of the stomach is always fatal. However, an animal will often live several hours after the rupture occurs.

TREATMENT.—Treatment consists in moving the bowels before an inflammation takes place; therefore, give one ounce of aloes, thirty grains calomel, one dram ground nux vomica and two drams ground ginger, made into a bolus. Give at one dose. Eight hours later give a pint of raw linseed oil and one dram tincture nux vomica at a dose three times a day until the bowels move. Also give injections of warm soap suds, apply mustard and water to the abdomen and if the pain is intense give four grains of morphine four or five times a day. Give the animal water if he craves it. As a last resort I have thought good results followed giving twenty-five drops of croton oil in a pint of raw linseed oil. It is well to keep in mind that a little walking exercise assists greatly in moving the bowels.

GASTRITIS—INFLAMMATION OF THE STOMACH.—

CAUSES.—Gastritis is usually the result of taking irritants or poisons, such as arsenic, brine or lime, into the stomach.

SYMPTOMS.—The animal suffers great pain, may sweat freely and the pulse is weak. The horse is less liable to have gastritis than the ox or dog.

TREATMENT.—Without knowing the cause you cannot treat gastritis properly. If it is due to eating arsenic, give hydrated sesquioxide of iron; also give nutritive tonics and stimulants, plenty of eggs and milk and such home remedies as soothe our own inflamed stomachs.

PEOPLE'S HOME REMEDIES.—For Gastritis or Inflammation of the Stomach.—

1. **Sulphuric Acid.**—Give from half a teaspoonful to a teaspoonful of sulphuric acid well diluted with milk, whites of eggs, or oils. Also give linseed gruel.

ENTERITIS—INFLAMMATION OF THE BOWELS.—Enteritis, or inflammation of the bowels, as it is commonly termed, is a very fatal affection of the horse and I might say in all the lower animals. As a rule the inner coat of the bowels is affected. However, all the other coats may become involved, and the large intestines are much more commonly affected than the small ones. This is not a common disease of the horse, but when it does exist it is usually fatal.

CAUSES.—It is usually the result of other ailments that affect the bowels. Certain animals are seemingly predisposed to it. It very often follows the giving of poisonous doses of croton oil, arsenic and other irritating drugs. It also results from impaction of the bowels caused by food clogging them and also from foreign bodies lodging in the intestines. It also results from intussusception or a telescoping of the bowels, or from volvulus or a knotting or kinking of the bowels. It is possible for a horse to suffer with this disease for several days; however, most cases do not last longer than twenty-four or thirty-six hours.

SYMPTOMS.—The symptoms are very similar in the first stages to those of colic, but they soon become more severe, the pain more continuous, the pulse quicker and the temperature usually rises. In most cases the horse tries to roll on his back and appears easiest in this position. The abdomen is hard and painful to the touch. Cold sweats appear on the body. The eye is somewhat blood-shot and the animal wanders about the stall as though unconscious of what was going on. Whenever a diarrhea sets in it should be a hint that recovery is doubtful.

TREATMENT.—The treatment of this fatal disease is unsatisfactory. Give opiates freely, and small doses of calomel and oil. If it is convenient, give morphine hypodermically, from one to three grains at a dose, repeating the dose as often as necessary to give the animal relief. Injections of tepid water with a little tobacco added is a good treatment. Apply mustard and water freely to the abdomen. See that the animal has pure fresh air to breathe and look well after the horse's general comfort. Do not allow him to stand in a draft or chill and do not allow any by-stander to suggest giving a horse suffering from enteritis a dose of physic, for if you do it adds to his chances of dying. I have known of hundreds of horses being killed on account of this mistake being made. It is well to keep in mind that large doses of opium to quiet the animal and keep him quiet throughout his sickness is the best

remedy that can be given. Also apply hot applications and mild counter-irritants to the abdomen.

PEOPLE'S HOME REMEDIES.—For Inflammation of the Bowels.—

1. **Hot Water.**—Apply woollen blankets wrung out of hot water to the abdomen and back.

2. **Vinegar, Mustard and Turpentine.**—To two quarts of vinegar add half a pound of mustard and an ounce of turpentine. Mix and rub on the belly and back and then tie a blanket around the horse.

3. **Opium and Belladonna.**—Give from one to two drams of powdered opium mixed with one dram of extract of belladonna. This dose may be given every three or four hours.

4. **Oatmeal Gruel, Starch Water, Etc.**—Apply hot blankets to the belly and give oatmeal gruel, starch water or linseed tea.

5. **White Oak Bark.**—Make a tea of white oak bark and give large and frequent doses. Apply mustard water to the legs and to the body apply blankets wrung out of hot water and sprinkled with turpentine.

PERITONITIS.—(See "Cattle Department.")

PEOPLE'S HOME REMEDIES.—

1. **Opium and Calomel.**—Every 2 to 4 hours give from 1 to 2 drams of powdered opium mixed with $\frac{1}{2}$ dram of calomel. Also apply mustard plasters or turpentine stupes to the belly.

HERNIA—RUPTURE.—A hernia is a protrusion of the whole or a part of an organ through either a natural or an unnatural opening. It usually means a protrusion of some of the intestines from the abdominal cavity. The name usually indicates the location and we meet with umbilical, scrotal and inguinal hernias. When it interferes with the circulation of the parts it is called strangulation. In many cases it is reducible.

INGUINAL HERNIA.—Inguinal hernia is usually met with in young animals or stallions and consists of the passage of a portion of the intestines through a ring into the inguinal canal, becoming strangulated and producing violent colicky pains. These are difficult cases to diagnose and if discovered the treatment consists in casting the horse, rolling him on his back, passing the hand into the rectum, seizing the bowel and shaking it loose, then applying a pad and keeping the bowel within the body. With this treatment the parts may close and a recovery take place. Otherwise, it would be necessary to castrate the horse by the covered method.

SCROTAL HERNIA.—Scrotal hernia is very common in young animals at birth and it very often gets well without treatment. When it produces no harm it is best to leave it alone until it does.

SYMPTOMS.—A bunch of this kind usually increases in size after the animal has eaten a hearty meal. It is always larger in hot weather for cold seems to contract these bunches. A very good test is to place the hand on the bunch and have an assistant oblige the animal to cough; when coughing the hernia will be forced out and enlarged. It is always a good plan to examine the hernia before castration.

TREATMENT.—The only satisfactory treatment is a surgical operation and this work should be done by an expert. Therefore, it is needless to give directions as to how the work should be done.

UMBILICAL HERNIA.—Umbilical hernia is a protrusion of the bowel through the umbilicus (navel opening) and is most commonly met with in young animals. It seldom causes much inconvenience and is almost always re-

duceable. Of course there is some danger of its becoming strangulated, but this is the exception. Very often the bunch can be reduced by pressure and some veterinarians try bandages or a truss before they will consent to operate. Skewers are often put through the skin and a ligature applied back of them, or a clamp is applied and left on, allowing the pouch of skin to slough off. This very often brings about a perfect recovery. I have also cut into the hernial sack, made the edges of the abdomen raw, stitched the opening with heavy catgut sutures, then placed a bandage and pad of oakum over the bunch and obtained splendid recoveries.

VENTRAL HERNIA.—This is a kind of hernia that takes place through an artificial opening in the abdomen. It is the result of accident. It is very often caused by kicks or being hooked by cattle, or in old animals it sometimes takes place on account of the abdominal muscles giving way, the result of over exertion.

TREATMENT.—If very small it is not always advisable to do much for it unless it increases in size, becomes strangulated or interferes in some way with the usefulness of the animal. When it does it is well to open the abdomen, scarify the edges of the opening, stitch them together with heavy catgut, treat the wound antiseptically and wear a bandage and pad until a recovery takes place.

DIAPHRAGMATIC HERNIA.—In diaphragmatic hernia the bowels pass from the abdominal to the thoracic cavity and it is not unusual when it occurs to find several feet of the small bowels in the chest. Death always follows.

Causes.—It is usually the result of severe exertion.

Symptoms.—Same as enteritis.

Treatment.—Is of no avail.

INTESTINAL WORMS—LONG ROUND WORMS—TAPEWORMS—PIN WORMS.—The tapeworms have flat bodies and are made up of a succession of segments or links with a narrow neck and quite small head, some of them being round headed and others flat headed. We also find flukes of a flat shape with digestive organs and a number of sucking discs; we also find the thorn-headed worms with long rounded bodies and retractible snouts with hooks by which they attach themselves to the mucous membrane of the bowels, but they have neither mouth nor digestive canal. The horse harbors in his bowels tapeworms and round worms and I have seldom failed to find them. The large worms usually inhabit the small intestines and the small worms reside in the large bowels and as the large worms have sixty or more feet of bowels for their home, it is not surprising that they are difficult to destroy and when we consider that the small worms have thirty or more feet of large bowels to reside in, are you surprised at a single dose or two of medicine failing to reach them all? Horses become wormy by taking food or drinking water that contains worm embryos which, when meeting the heat and moisture of the body, soon grow and develop into worms and of course they multiply rapidly and if not destroyed or passed out of the body they disturb digestion and pick up considerable nutriment, causing the animal to get out of condition and lose flesh. Besides, I have known them to puncture the bowels.

SYMPTOMS.—The symptoms are shown whenever worms are present in large numbers and attach themselves to the mucous membranes or when they bore through these to reach other parts. They produce signs of ill health,

poor condition, hide-bound, a scurvy, dry state of the skin, pot-belly, an itchy condition of the skin and root of tail and often a voracious appetite with fetid breath, sometimes diarrhea and at other times costiveness. There is bloating in the morning, a puffy swelling and itchy condition of the anus which is very often surrounded with a sort of dried mucus, rubbing of the tail and colicky pains, and one of the best and safest symptoms is the passage of worms. However, it is not always possible to see them without the use of a magnifying glass.

TREATMENT.—Perhaps the most reliable remedy known is santonine; however, it should be given in one-dram doses combined with twenty grains of calomel and two drams of powdered kamala and made into a bolus with linseed meal and given on an empty stomach in the morning, daily for three or four days; then discontinue for several days and repeat it. Another popular home remedy is giving one ounce of turpentine and one dram of oil of male fern in one pint of raw linseed oil at a dose twice a week for two or three weeks. This mixture should be given as a drench in the morning according to directions for drenching horses. All vermicides given to human beings that produce good results are proper remedies for horses, but give ten times the quantity at a dose. For pin worms wash out the rectum with a gallon or two of soap suds, then use an infusion of quassia which is made by soaking one ounce of quassia chips for one hour in a pint of warm water. Or, dissolve one ounce of sulphate of iron in three or four parts of tepid water and use this instead of the quassia. Or, dissolve three ounces of common salt in a gallon of tepid water and use this. In treating wormy live stock it is well to consider the importance of removing the cause, which means a change of food and the boiling of the water supply.

PEOPLE'S HOME REMEDIES FOR WORMS.—

1. **Fine-Cut Tobacco.**—Give an ounce of fine-cut tobacco in the feed once a day for a week or ten days.

2. **Turpentine and Linseed Oil.**—Give half a pint of raw linseed oil to which has been added an ounce of turpentine.

3. **Salt and Ashes.**—Mix equal parts of salt and wood ashes and give two tablespoonfuls at a time in the feed once a day.

4. **Pin Worms.**—Once or twice daily inject an infusion of either tobacco or quassia chips, using half a pound to a gallon of water. Repeat once or twice a day for two or three days and follow with a physic.

5. **Pin Worms.**—Dissolve a tablespoonful of salt in a quart of tepid water and wash out bowel daily for a week.

INTESTINAL TUMORS.—Tumors, if not large, may exist in the intestines for a long time without doing much harm. However, when they grow large they are always troublesome, very often causing death.

CAUSES.—Any injury to the bowel, such as puncturing for flatulent colic, or some rough uneven hard substance passing through the bowel may be the means of starting a tumor-like growth and it is not uncommon to find them in white horses suffering from melanosis.

SYMPTOMS.—A horse suffering from tumors in the bowel usually shows colicky pains, paws, rolls and throws himself about gently. The pulse is slightly quickened, bowels are constipated, the body and extremities become cold and the animal very often dies in a few days.

TREATMENT.—Give morphia, opium or belladonna and if a correct

diagnosis can be made and the services of a skillful surgeon can be had ask him to operate, for this is the only possible chance of saving the horse's life.

INTESTINAL CONCRETIONS.—Intestinal concretions sometimes form in the bowels and block them. They are usually hard and are composed of lime, magnesia, hair, meal and many other substances. Many of these masses have some hard substance as a sort of nucleus around which these substances seem to fasten and accumulate.

CAUSES.—Animals that lick others during the shedding season and cows that are fond of picking up pieces of wood, metal or leather are quite likely to have trouble of this kind. Besides, certain kinds of feed are likely to produce dust balls.

SYMPTOMS.—The animal usually has considerable abdominal pain and as the disease progresses the horse is inclined to sit on his haunches and if the bowel is entirely blocked he soon shows all the symptoms of enteritis or inflammation of the bowels.

TREATMENT.—First of all it is good treatment to wash out the rectum with soap and water that is a little warmer than the temperature of the body. If there be much pain, opiates should be given and there is none better than tincture of opium (laudanum) and in the horse large doses of purgative medicine should be given. Raw linseed oil or sweet oil is the safest. If aloes, calomel and ginger are given, it should be in the early stages before any inflammation of the bowels has taken place. A horse can often be relieved by introducing the hand into the rectum and removing the obstruction, providing the impaction is in the posterior bowel and within reach. It is well to keep in mind that it is easy to injure the bowel; therefore, the finger nails should be cut short and the hand well oiled before this work is done.

DYSENTERY.—This term is used when blood comes away mixed with the feces and it may or may not occur as an independent disease.

CAUSES.—It is very often the result of tuberculosis of the bowel or due to the presence of irritants in the intestines. It also comes from drinking stagnant or impure water; besides, an inferior quality of feed often causes it.

SYMPTOMS.—An excessive bowel action and some blood and mucus mixed in the evacuations are common symptoms of dysentery. The pulse is usually quick, the animal thirsty, bowels ulcerated, coat dry and hot, and if the animal does not get relief he loses strength rapidly and death may be the result.

TREATMENT.—I invariably give a dose of oil, either raw linseed or olive oil. Castor oil is often given with good results. Chalk and opium, ether, whiskey, brandy or rum are proper remedies. Catechu, tannic acid, starch and wheat flour act very well. Whenever the bowel discharges lessen materially, begin to give tonics such as equal parts of sulphate of iron, gentian, ginger and cinchona, a tablespoonful at a dose in feed two or three times a day. It is always a mistake to allow an animal to have too much hearty food or vegetables after recovering from an attack of this kind; besides, he should be kept reasonably quiet.

DIARRHEA.—Diarrhea consists in the passage of too much liquid feces and it is very often the result of other ailments, such as indigestion and enteritis.

CAUSES.—Eating infected food, too much rich food when the animal is not accustomed to it, drinking stagnant or filthy water, grazing on bare pastures where too much earth is taken in with the food and eating too many vegetables and badly cured fodder are among the causes of diarrhea. Certain

rangy horses with slim bodies, flat ribs and which are poorly ribbed up, are subject to looseness of the bowels.

SYMPTOMS.—The passage of too much liquid fecal matter and exhibiting symptoms of pain each time the bowels are moved are symptoms of diarrhea. In the early stages the heart action is not much changed; however, later on the circulation quickens and the extremities may grow cold; also, the animal may stagger, indicating considerable weakness.

TREATMENT.—Find out if possible whether the case is acute or chronic. It is generally good practice to give from one pint to one quart of raw linseed oil or sweet oil. It is also a good plan to give sweet spirits of nitre, ginger, and opium; one-half ounce of each at a dose in a pint of water, three or four times a day. The quantity of opium should be increased if the bowel action is not checked; or you may give one dram powdered opium, two drams powdered catechu and one ounce prepared chalk at a dose two or three times a day. Very often by giving flour or starch in water two or three times a day the case will be helped; besides, wheat flour gruel is a proper food to give. In the treatment of young foals they should be given medicine very carefully, in the same way, but given in very small doses. If the disease is due to micro-organisms, bowel antiseptics such as creosote, carbolic acid, hypo-sulphite soda or salol should be given and counter-irritants applied externally.

DIARRHEA IN YOUNG COLTS.—This is brought on by the colt's getting too much rich milk from the mother or from her udder being infected, or from exposure.

CAUSES.—The first milk from the mare or sow possesses laxative properties; therefore, if the colt takes too much it is likely to produce diarrhea. Sometimes it is the result of the mare's milk being of poor quality; or, if she is working and becomes overheated, this changes her milk. It is also the result of exposure to storms and lying on wet cold ground.

SYMPTOMS.—Watery bowel movements.

TREATMENT.—Keep the colt quiet, clothe his body warm and bandage the legs if they are cold. Give a small teaspoonful of laudanum and a large teaspoonful of good whiskey, twenty drops spirits of camphor and five grains of powdered alum in some of the mare's milk every three or four hours until the bowels tighten. Or, give five grains sulphate iron in one ounce water every three hours. Or, you can give any good home remedy that is used in diarrhea or dysentery in man.

PEOPLE'S HOME REMEDIES.—For Diarrhea in Young Colts.—

1. **Flour.**—Mix two tablespoonfuls of flour with a teacupful of cold water and drench the colt twice a day. If the case is severe and attended with much pain apply a mustard plaster to the abdomen and give a drench of 2 tablespoonfuls of whiskey, 1 ounce of castor oil and 10 drops of laudanum.

2. **Preventive.**—To prevent scouring in foals do not feed the mare vegetables or too much grass to purge her soon after foaling but feed some old oats and well cured fodder. This comes from a Granger living in Stockton, Iowa.

CONSTIPATION.—Constipation is more a symptom of disease than a disease itself.

CAUSES.—Perhaps over feeding and want of exercise are the most common causes of constipation. A rapid absorption of the fluids of the bowels during fever always has a tendency to produce constipation. It is also an indication of a torpid liver. Certain kinds of food cause it; it can be brought

by feeding too much nourishing food or too much non-nutritious food; besides, it often follows indigestion and derangement of the digestive system, especially in old animals.

SYMPTOMS.—As a rule it is not difficult to make a diagnosis, but do not be misled if a slight diarrhea is present, for this is often set up as an effort of nature to empty the bowels. The dung is often covered with mucus, the animal presents a dull appearance, shows some abdominal pain at times, rolls some, bloats a little, and the trouble is usually in the large bowels. The rectum is usually irritated and protrudes somewhat. This is a result of the horse making an effort to empty his bowels.

TREATMENT.—If a horse is affected, give aloes; if an ox, give epsom salts or oil; and castor oil for the dog. It is well to give a little ginger, or capsicum to prevent griping, or a decoction of tobacco as an injection and it is often necessary to empty the bowel by hand, especially if there is any paralysis of the rectum. In chronic constipation it is well to keep in mind that nearly all vegetables have a laxative effect; therefore, they should be fed to all idle horses. The bowels move much more often when an animal is exercised than when standing still. Therefore, exercise is a preventive.

CONSTIPATION IN YOUNG COLTS.—Nearly every colt is costive when born.

CAUSES.—It is more likely to occur in colts when the mother has been fed on dry food and her bowels are in a costive state.

SYMPTOMS.—There is constipation if the bowels of a colt do not move within twelve or twenty-four hours after birth.

TREATMENT.—If the bowels do not move within twelve or twenty-four hours after birth, inject sweet oil or push in a round, smooth, tapered piece of ivory soap or a glycerine suppository, or something that is oily and not irritating, but be sure not to injure the bowel. Sometimes soap suds act very well.

PEOPLE'S HOME REMEDIES.—For Constipation in Foals.—

1. **Castor Oil.**—Give from 2 to 4 ounces of castor oil at a dose. The lives of many foals would be saved if the constipated condition of the bowels was noticed and this treatment given.

VOLVULUS.—Volvulus is a twisting or kinking of the bowel that occurs when the animal is rolling. Young animals appear to be more affected than older ones and it is not uncommon to have it take place while an animal is suffering from colic.

SYMPTOMS.—This is an ailment that is difficult to diagnose for the symptoms are very much the same as in inflammation of the bowels, but the animal very often shows more distress. The animal sits on his haunches, much like a dog.

TREATMENT.—As a rule very little can be done to prevent a fatal termination but it is always good practice to give remedies that will quiet the animal and there is none better than tincture of opium (laudanum) given in one-ounce doses as often as necessary to allay the pain. In my practice I advise the destruction of a horse that has volvulus and cannot be relieved from the pain, for this is the humane thing to do.

INTUSSUSCEPTION.—Intussusception means a slipping of a portion of bowel within another very much as a telescope is shortened. It occurs in both the large and small intestines, but I have found the small intestines to be most frequently involved.

CAUSES.—No one has ever been able to tell the exact cause; however, it frequently follows attacks of spasmodic colic when there is violent muscular contraction of the bowels and it is most common in young animals.

SYMPTOMS.—Almost identical with those of volvulus.

TREATMENT.—A surgical operation is sometimes attended with good results; however, to be successful the work must be well done. I have known a portion of the bowel to slough and come away showing that nature effected a cure. (See treatment for volvulus and follow it.)

PROLAPSUS ANI—FALLING OF BOWEL.—Prolapsus ani or fallen bowel is a condition of the rectum which follows irritation of the bowel, very often from what is termed back-racking when the hand of the operator was too large or when he neglected to oil his hand properly or when too much force was used.

CAUSES.—It is caused by anything that irritates or inflames the rectum such as irritating drugs in injections and giving certain medicine to purge animals or inexperienced persons emptying the bowel by hand.

SYMPTOMS.—There is a red looking mass protruding from the bowel the size of a pint measure or sometimes even larger.

TREATMENT.—First of all wash out the bowel with tepid water, using a small rubber tube; however, in case the water fails the hand should be used and the smaller the hand the better. The protruding part should be washed clean and forced back into place and the hind quarters raised eight or ten inches higher than the fore quarters. This is best done by arranging the stall floor. Put $\frac{1}{2}$ pound of sugar of lead, four ounces of laudanum and one ounce of tannic acid into a gallon of cold water and apply to the rectum five times a day. Keep the bowels open by feeding well salted bran mash, vegetables, or grass or give some raw linseed oil. I have sometimes found it necessary to remove a portion of the bowel, but not until it had become gangrenous.

RUPTURE OF THE RECTUM.—Rupture of the rectum is by no means an uncommon injury. It often occurs by the careless use of metal syringes, mal-address in mating mares, in taking away foals and in back-racking.

TREATMENT.—The treatment consists in stitching the break with strong catgut and bringing the edges as closely together as possible, then keeping the bowel clean and not too full and washing it out daily with one part carbolic acid, two parts glycerine and fifty parts water.

SORE MOUTH.—This is an inflammation of the mucous membrane following many different constitutional and exciting causes.

CAUSES.—Stomach disturbances from eating too much bad food is a cause; or, eating irritating things or taking drugs which have a caustic or irritating effect will often produce an inflamed condition of the mouth.

SYMPTOMS.—The mouth is swollen, hot and tender; there is drooling of saliva and there is always a reddened appearance of the mouth, and sometimes small ulcers or blisters can be seen; however, this is not very common.

TREATMENT.—Feed grass or damp, cut fodder; also feed soft mash that will not irritate the mouth. Dissolve $\frac{1}{2}$ ounce of borax in a pint of water and wash out the mouth twice a day. There are many home remedies that will do just as well as drugs. Alum, salt or chlorate of potash are very good.

STOMATITIS.—This is the name usually given to a soreness that oc-

curs in the mouth and on the tongue, very often occurring when young animals are teething.

CAUSES.—Eating infected food which causes a derangement of the stomach and digestive organs, lack of nourishment, debility from scours, becoming infected through the navel, and the cutting of teeth appear to be the common causes of this ailment. It usually affects young animals; however, old ones are sometimes affected.

SYMPTOMS.—There is a redness of the mouth, with a dripping of saliva. A few days later small white points appear on the membrane of the mouth and these soon begin to break, giving off rather an offensive odor, then the mouth presents a gangrenous appearance.

TREATMENT.—A change of food is always advisable. The bowels should be moved gently by giving epsom salts or raw linseed oil. Antiseptic and astringent gargles should be applied and as a rule tonics should be given. If diarrhea is present give small doses of opium, lime water and creosote and continue the lime water for a week or ten days. Also give quinine three or four times a day or any of the home tonics that are used by the family. The mouth should be washed out three or four times a day and if it is gangrenous put one dram of permanganate of potash into twenty ounces of water, or one ounce of carbolic acid into forty ounces of water, or one ounce of coal-tar disinfectant into fifteen ounces of water and swab out the mouth two or three times daily. After using these washes it is a good plan to wash out the mouth with warm water.

PEOPLE'S HOME REMEDIES FOR STOMATITIS OR INFLAMMATION OF THE MOUTH.—

1. **Alum Water.**—As a mouth wash use an ounce of alum to a quart of water. Give soft feed only.

2. **Borax.**—Dissolve half an ounce of borax in a pint of water and use as a mouth wash. Hard dry feed irritates the mouth so give nothing but soft feed.

INFLAMMATION OF THE TONGUE—GLOSSITIS.—(See "Cattle Department.")

PEOPLE'S HOME REMEDIES.—

1. **Alum.**—As a wash use half an ounce of alum to a pint of water.

2. **Borax.**—Dissolve an ounce of borax in a quart of water and use as a mouth wash. Nothing is better.

SLAVERING OR FROTHING AT THE MOUTH.—This is a condition usually brought on by sharp points of the teeth irritating the cheeks or tongue or by giving horses strong irritating drugs which make the mouth sore or by the horse accidentally picking up irritating things. Foreign substances lodged in the mouth or tongue always cause an abnormal flow of saliva and so do some kinds of foods, such as second crop clover. Colts unaccustomed to the bit very often froth at the mouth.

TREATMENT.—If it is caused by sharp, uneven molar teeth, file off the outer edges of the upper row and the inside of the lower row. If it is caused by a foreign body, remove it. Dissolve one ounce of borax or one ounce of powdered alum or one ounce of baking soda in a quart of water and wash out the mouth three times a day, using not less than $\frac{1}{4}$ pint at a time. Feed the animal a cooling, laxative diet and if your colt slavers on account of the bit when you drive him, let him wear it when not in harness and not eating.

PEOPLE'S HOME REMEDIES FOR SALIVATION.—

1. Alum.—Dissolve an ounce of alum in a quart of water and use as a gargle or apply with a sponge or soft cloth.

IRREGULAR TEETH.—(See "Cattle Department.")

CAPS ON TEETH.—(See "Cattle Department.")

DECAYED TEETH—CARIES.—(See "Cattle Department.")

LAMPAS.—Whenever the gums behind the incisor or nipper teeth are somewhat full and up a little high, either with or without inflammation, it is called lampas.

CAUSES.—Any irritant that will cause sore mouth will produce a swelling of the gums and bars of the mouth; besides, lampas is always present in three, four and five-year-olds when their permanent teeth are coming in but older horses are not often troubled this way.

SYMPTOMS.—An inflamed condition of the gums and a swollen condition of the bars close to the incisor teeth are the two prominent symptoms of lampas; however, in some cases the gums are quite tender.

TREATMENT.—Food that is not too stimulating, such as bran mash or vegetables and grass to open the bowels, always assists in reducing the inflammation of the gums. Washing the mouth out three times a day with either borax or alum and water, $\frac{3}{4}$ ounce of either to a pint of water, or a weak salt solution does good. Never allow any person to burn them, for this is cruel, but I sometimes cut bars with a penknife to allow the serum to escape. Feeding corn to colts that have lampas is a mistake for it only makes them worse. They should be given soft feed.

PEOPLE'S HOME REMEDIES FOR LAMPAS.—

1. Alum Water.—Use alum water as a mouth wash. This will be found an effective remedy.

THE TONGUE, INJURIES TO.—The tongue is quite likely to suffer from injuries and in many different ways.

CAUSES.—The tongue may be injured by being cut by sharp teeth, giving irritating medicine without plenty of water and by foreign bodies lodging in the tongue. I have found rubber rings around the tongue; also hog rings through the lower portion of the tongue of crib-biting horses.

TREATMENT.—In all cases of sore tongue it is very important that a careful examination of the tongue be made with the hand for if this is not done the cause may not be discovered. If a foreign body is found, remove it at once and wash out the mouth with warm water, then apply any of the home gargles used in human practice; or, dissolve $\frac{1}{2}$ ounce of alum, or $\frac{1}{2}$ ounce of borax, or one ounce of salt in one quart of water and apply to the tongue three times daily. If the discharge is offensive apply antiseptic washes, such as one part carbolic acid and 99 parts water, or any of the reliable coal-tar disinfectants, making the lotion one part to fifty of water.

STRICTURE OF THE ŒSOPHAGUS.—This is usually the result of choking brought on by continued inflammation of the gullet following the accident.

SYMPTOMS.—When passing the probang it moves down easily until it reaches a certain point, there it is passed with difficulty and after more force is used the stricture gives way, then the probang moves along easily.

TREATMENT.—As a rule treatment in these cases does not give satisfactory results; however, I have had cases of this kind in valuable animals

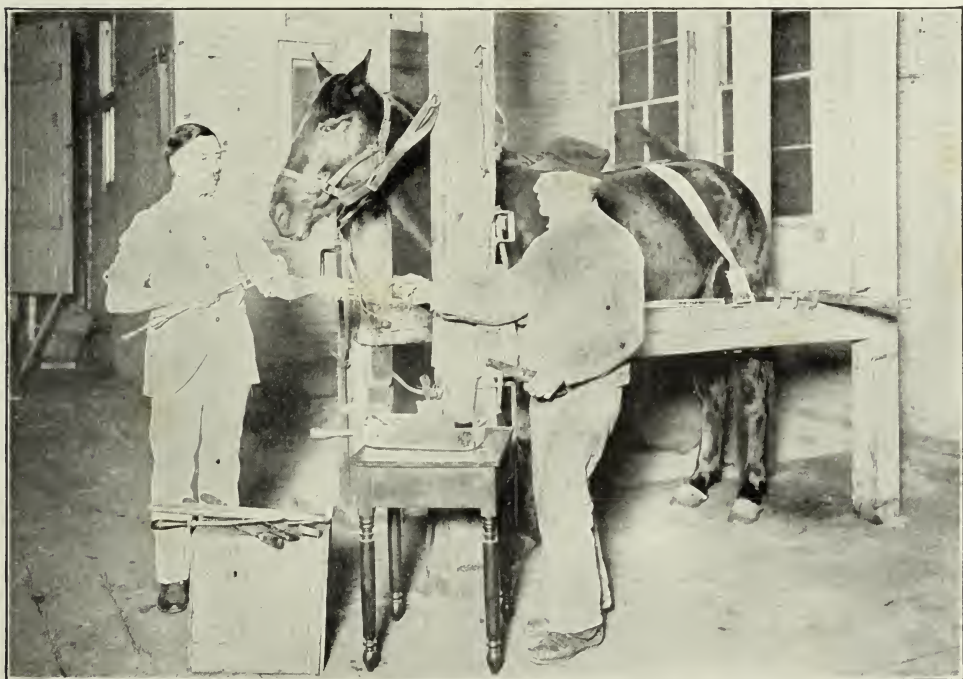
METHODS OF SECURING THE HORSE WHILE GIVING MEDICINE OR
PERFORMING AN OPERATION.



HORSE BACKED IN STALL READY FOR OPERATION.

A horse may be backed into the stall and secured when necessary to give a drench or perform a minor operation. Dr. Fair is about to float (file) the teeth. The teeth of every horse should be carefully examined once a year and attended to if necessary.

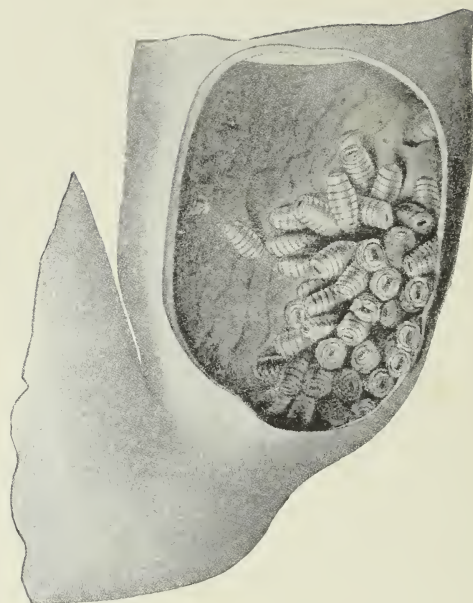
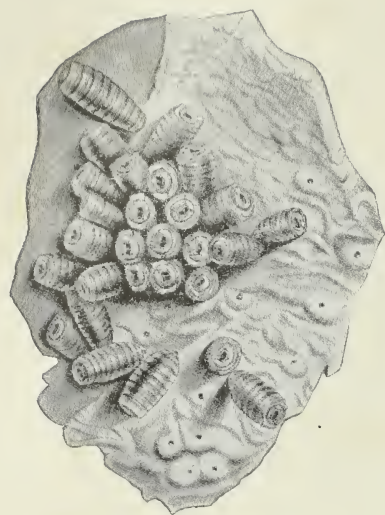
(Photographed at Dr. Fair's Veterinary Hospital especially for this book.)



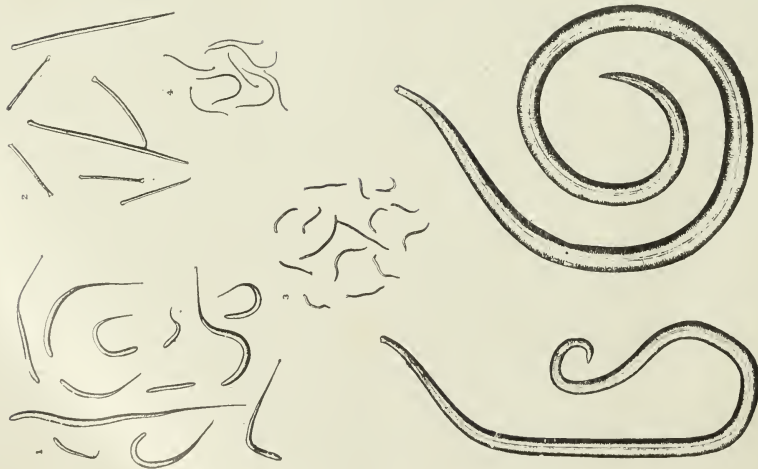
HORSE IN SIMPLY CONSTRUCTED STOCKS READY FOR OPERATION.

Dr. Fair, with English Sliding Chisel, is about to cut a large abdominal growth from a molar tooth. The assistant is handing him a balling iron for keeping the horse's mouth open. These stocks are very simple. The horse's legs may be hopped if necessary.

(Photographed at Dr. Fair's Veterinary Hospital especially for this book.)



BOTS IN A HORSE'S STOMACH AND INTESTINE.



VARIOUS INTESTINAL WORMS.

where I arranged to have the probang passed daily, increasing the size of the probang until the stricture was dilated and a recovery took place.

DILATION OF THE ŒSOPHAGUS.—This is usually the result of choking caused from a stretching or enlargement of the gullet at a certain point when the accident occurred.

SYMPTOMS.—In order to arrive at a correct diagnosis it is often necessary to pass a probang; however, very little can be done for an ailment of this kind more than to give oil when the attack is on and feed sloppy food. When the swelling is high up a pad is sometimes applied to good advantage.

CHOKING.—

CAUSES.—Choking occurs in all animals, but it is perhaps of most frequent occurrence among cattle and of course is due to the arrest of some substance swallowed on its way to the stomach and clogging the gullet, thus preventing the passage of either liquid or solid food from the mouth to the stomach. It is often caused in a simple way as, for instance, was the case with a valuable saddle mare brought to my hospital suffering from choke and in great distress. We cast her, rolled her on her back and extended her head preparatory to passing the probang; however, before doing so I used a mouth speculum and introducing my hand into the back part of the mouth, I picked out a fresh hen's egg. This mare was owned by Judge Williamson, General Counsel of the New York Central Railway Lines. It appears the mare had swallowed the egg while eating mash out of a feed box that a hen had used for a nest. A hungry, greedy animal often takes large mouthfuls and swallows food partially masticated and too dry and therefore chokes. Animals frequently choke on potatoes, apples, turnips or other vegetables, or by picking up pieces of coal, bones or wood. I have known horses to choke by giving them large dry horse pills.

SYMPTOMS.—One of the first symptoms is uneasiness, coughing, attempts at swallowing, spasmodic movements of the neck when attempting to drink water which returns through the nostrils. When cattle are choked there is usually considerable coughing.

TREATMENT.—First of all, find out, if possible, the probable cause and if found to be a substance that can be crushed this should be done. If the obstruction is lodged in the pharynx it can often be removed by the hand, otherwise pushed down with a probang. In cattle this is easily accomplished, even with a flexible whip handle; however, in horses it is much more difficult. In some cases I have found it necessary to cut the object out; however, this should be done by a veterinarian.

PEOPLE'S HOME REMEDIES FOR CHOKING.—

1. **Fomentations.**—Apply hot fomentations just above the choke until the parts are relaxed and then work the obstacle loose with the hands. Sweet oil or linseed oil poured down the throat will help.

2. **Soap-suds.**—Pour a liberal quantity of thick soap-suds down the throat.

3. **Hose.**—Run a rubber hose down the throat. This should be done with care.

BOTS (HORSE BOT-FLY).—Bots are the result of larvæ dropped by the horse bot-fly and usually deposited in the form of a yellow nit that the fly fastens to the hair on some part of the horse, most commonly on the chest and legs. The young larvæ are licked off by the horse and taken into the mouth and transferred to different parts of the body, generally

passing into the stomach where they develop and attach themselves to the mucus lining, where they remain until fully developed. The bot is not nearly so dangerous as it is supposed to be. Nearly all horses that are exposed to flies have bots and after remaining in the stomach for five or six months come away with the feces and for choice bury themselves in the ground or under filth and in six or eight weeks become winged bot-flies.

TREATMENT.—Bots are supposed to do a great deal of harm; however, this is a mistaken idea, for there may be a great many of them in the stomach without even disturbing digestion very much. Drugs given to horses with bots seldom do much good. Well-groomed horses may be entirely free from them and those that are wiped with a rag that has been saturated in kerosene may also be free from them, for kerosene destroys the nits. Applying one part vinegar and two parts water to the horse's coat during the fly season will also destroy the gadfly eggs. By using these home remedies you can very easily prevent your horse from having bots. A favorite remedy is milk and molasses. This is used a great deal. Try giving one-half ounce of turpentine and four ounces of raw linseed oil on an empty stomach every morning until three doses have been given, then give six drams of powdered aloes, twenty-five grains of calomel and two drams ground ginger two hours after giving the last dose.

PEOPLE'S HOME REMEDIES FOR BOTS.—

1. **Indigo Water.**—Make some weak indigo water and drench the horse with it. This will knock the bots.

2. **Milk and Syrup.**—Give the horse a drench of a quart of sweet milk and the same quantity of honey or molasses. The sweetness of this drench causes the bots to loosen their hold on the stomach and then an ounce of turpentine given in a pint of raw linseed oil will expel the bots.

3. **Hop Tea.**—Drench the horse with a quart of strong hop tea.

4. **Red Pepper Tea.**—Give the horse a quart of strong red pepper tea. This causes the bots to let loose of the stomach and they may then be expelled with a pint of raw linseed oil.

INFLAMMATION OF THE LIVER—HEPATITIS—ALSO CONGESTION OF THE LIVER.—Congestion of the liver is a very common ailment of horses in warm climates where they feed on luxuriant grasses. Over-fed animals that are idle and kept in badly ventilated stables in low level land in the South are very often sufferers from liver congestion and inflammation of the liver. Inflammation does not by any means always follow congestion of the liver.

SYMPTOMS.—In cases of congestion of the liver the animal often appears as though he had been poisoned, very often showing great prostration with dull sunken eyes, an anxious face, quick pulse, quick breathing and trembling with violent colicky pains. He frequently looks at the flank, lying down and rising. The mucous membranes are yellow and in some cases there appears to be a slow sort of congestion going on. Upon striking the animal a blow on the right side in the region of the last ribs, he appears tender. The bowels at first may be loose but gradually harden. The appetite is usually gone and the legs frequently stock. In some cases the horse shows lameness in the right foreleg. If the lungs or heart are impaired the liver is generally affected to a certain extent; therefore, derangement of the liver is often a symptom of other diseases and diseases of the liver are very difficult to diagnose.

TREATMENT.—A full dose of carthartic medicine should be given but avoid giving calomel when the liver is congested. Good results follow giving epsom salts in three or four-ounce doses twice a day and feeding the animal on easily digested food. Inflammation of the liver (hepatitis) should be treated very much the same as congestion of the liver, adding mild stimulants and applying light applications of mustard and water over the right side. Give scalded bran and some mixed hay. Carrots and grass are proper foods for an animal in this condition.

PEOPLE'S HOME REMEDIES FOR HEPATITIS OR INFLAMMATION OF THE LIVER.—

1. **Bleeding, Etc.**—Draw from four to six quarts of blood from the jugular vein and give one-half-ounce doses of saltpeter three or four times a day. Feed sparingly and chiefly on bran mash.

JAUNDICE—YELLOW.—Jaundice or “yellows,” as it is often called, is the most common disorder of the liver.

CAUSES.—It is very often the result of debilitating fevers and other diseases; also, it results from eating too much rich food when idle. It is, no doubt, often the result of a stoppage of the bile duct and a torpid condition of the liver; the urine may contain bile. This ailment is very likely to follow other diseases of the liver.

TREATMENT.—If there is a stoppage of the duct give twenty grains calomel daily for five days and if the bowels are blocked give six drams Barbadoes aloes, of course adding two drams ground ginger to the aloes to prevent griping. Giving granulated phosphate soda in warm water daily, or podophyllin occasionally, will help these cases. During the summer months a run to grass is always beneficial.

PEOPLE'S HOME REMEDIES FOR JAUNDICE OR YELLOW.

1. **Glauber's Salts.**—Give two ounces of Glauber's salts once or twice a day for a week.

CIRRHOSIS.—Cirrhosis is really an induration or hardening of the liver and frequently follows inflammation of the liver.

CAUSES.—It is caused by feeding a poor quality of food, such as badly cured fodder, after living on rich nutritious food, and in man it is very often the result of long and continued use of alcoholic stimulants.

SYMPTOMS.—The same symptoms are present as in other liver disorders; the animal soon becomes greatly emaciated and shows a rough coat; the dung smells strong and the membranes are pale.

TREATMENT.—It is difficult to make a correct diagnosis. Give baking soda, one or two ounces; Glauber's or epsom salts; or, phosphate of soda in 6 dram doses twice or three times a day. Also give tonics.

ASCITES, ANASARCA OR DROPSY.—These ailments are the results of other diseases.

CAUSES.—There is generally quite a quantity of effusion or water in the abdomen and it is usually the result of diseases of the liver or kidneys or chronic peritonitis.

SYMPTOMS.—The coat is generally dry and dusty and the horse is hide bound and has an unthrifty appearance. The abdomen is distended and the bowels are irregular. The animal may eat well, but even if he does he loses strength.

TREATMENT.—Medicine that acts on the kidneys should be given and there is none better than iodide of potassium. Give one or two drams

two or three times a day. Feed nutritious food that is easily digested. If the swelling is not reduced it is good practice to open into the abdomen and allow the water to escape. However, if this becomes necessary you had better have it done by a veterinarian. In mild cases give a tablespoonful of the following compound powder at a dose in feed, three times a day until a recovery takes place. Take equal parts by weight of powdered sulphate iron, ground gentian root, ground ginger and powdered saltpeter.

PEOPLE'S HOME REMEDIES FOR ASCITES OR DROPSY OF THE ABDOMEN.—

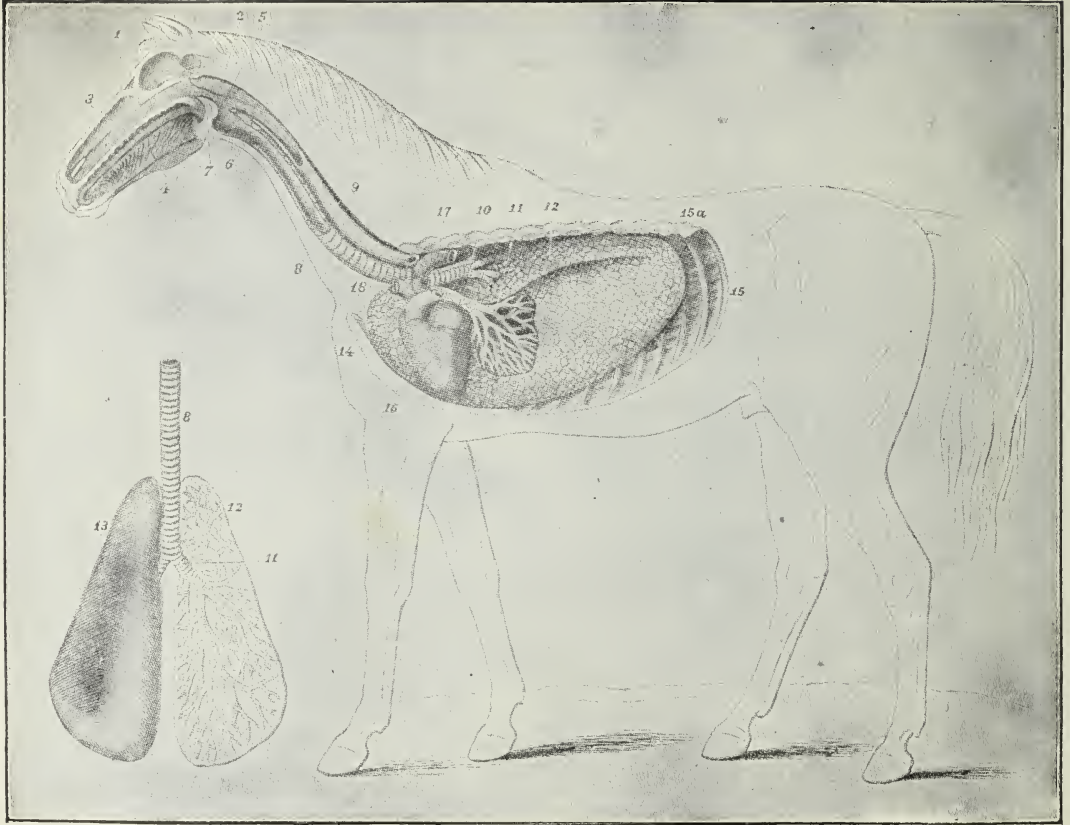
1. **Salts and Saltpeter.**—Give either epsom or Glauber's salts and also give one-half-ounce doses of saltpeter.

LOCO DISEASE.—Loco disease is brought on by eating loco weeds, which bear pods, and as these weeds seem to be a native of the western plains the disease is common in those parts but not met with in other parts of this country. These plants grow to be ten or twelve inches high and are of a gray color and remain green throughout the winter, which accounts for hungry animals eating them and getting into trouble.

SYMPTOMS.—If the animal eats much of the weed he soon begins to lose flesh and he becomes emaciated and usually dies of starvation. In the early stages the animal appears sluggish and moves slowly, the muscles tremble and he gets up with great difficulty. There is considerable trembling of the head and neck with a peculiar anxious expression followed by fits or a sort of delirium. The horse acts somewhat like a horse suffering with blind staggers. This fitful condition is most likely to occur in hot weather, especially if the horse is overheated by work. Cattle as well as horses are affected, but they resist the poisonous effects better.

TREATMENT.—In talking with chemists they tell me that the loco weed is not very poisonous, but it is almost wholly void of nutrition and hungry animals eating this weed, on account of its greenness and freshness during the winter season, fail to get sufficient nourishment to keep them alive; consequently, animals that are inclined to eat loco weeds should be kept away from them and fed other kinds of food and when showing symptoms of this ailment they should be given two tablespoonfuls of ground gentian, two tablespoonfuls of ginger and two tablespoonfuls of powdered charcoal at a dose in feed two or three times a day. (See treatment for "Indigestion.")





RESPIRATORY APPARATUS OF THE HORSE.

- | | | |
|---------------------------|--------------------------------------|--------------------------------|
| 3. Nasal chamber. | 9. Esophagus, or gullet. | 14. Sternum. |
| 4. Tongue. | 10. Section of left bronchus. | 15. Ribs. |
| 5. Pharynx. | 11. Ramifications of right bronchus. | 15a. Section of the left ribs. |
| 6. Larynx. | 12. Right lung. | 16. Heart. |
| 7. Epiglottis, or potlid. | 13. Left lung, seen from above. | 17. Posterior aorta (cut off). |
| 8. Trachea, or windpipe. | | 18. Anterior aorta (cut off). |

DISEASES OF THE RESPIRATORY OR BREATHING ORGANS.

(Including Diseases of the Lungs, Bronchial Tubes, Throat, Etc.)

PNEUMONIA—INFLAMMATION OF THE LUNGS.—Pneumonia is an inflammation of the lung tissues and may affect one or both lungs.

CAUSES.—It is caused by exposure, over exertion and parasites in the lungs and is the result of congestion following chills and other diseases of the higher air passages.

SYMPTOMS.—If it does not follow an acute congestion there may be shivering followed with a hot skin and fever with some cough. The horse stands with the forelegs apart, elbows turned out, nose poked out and as near an open window as possible and he breathes with a sort of moan. By sounding the chest you hear a crackling noise and as the disease progresses there is some discharge from the nose. When suffering with pneumonia the horse generally stands up, while the cow lies down.

TREATMENT.—Give a nice, airy box stall with a south window which is kept open. Apply mustard and water to the sides once a day. The bowels should be kept open but not too loose. Give some aconite or acetanilide to reduce the fever; also, feed the patient well and after the fever subsides give tonics.

PEOPLE'S HOME REMEDIES FOR PNEUMONIA OR LUNG FEVER.

1. **Whiskey.**—Every four or five hours give 6 ounces of good whiskey diluted with a pint of water. If the horse will not eat food and will drink milk, give him 3 or 4 gallons a day with 3 or 4 fresh eggs stirred into each gallon.

2. **Quinine.**—Make 1 dram of sulphate of quinine into a ball with a sufficient quantity of linseed meal and molasses and give one of these balls every three hours during the height of the fever.

PEOPLE'S HOME REMEDIES FOR CONGESTION OF THE LUNGS.—

1. **Whiskey, Brandy, Etc.**—Every hour give a quarter of a pint of either whiskey or brandy in a pint of water. Hand rub and bandage the legs to draw the blood to these parts. It is also well to rub the legs thoroughly with a liniment composed of equal parts of extract of witch hazel, alcohol, spirits of camphor and water. Use two or three times a day.

2. **Aromatic Spirits of Ammonia and Whiskey.**—Give one ounce aromatic spirits of ammonia and a teacupful of whiskey in a pint of cold water as a drench every two hours until his legs become warm and his body comfortable.

PLEURISY.—Pleurisy is an inflammation of the membrane which lines the chest and extends over the lungs.

CAUSES.—Nearly all the common causes of diseases of the air passages may cause pleurisy, and it is sometimes the result of injury.

SYMPTOMS.—There is some fever, a quick pulse and a crease extend-

ing from the elbow to the flank. Pressure between the ribs causes pain. By sounding the lungs a sort of rasping noise is heard. The horse has very little if any appetite. There is some coughing, but by tapping the chest a hollow sound is caused and there should be no rasping noise heard when the ear is placed to the breast.

TREATMENT.—The bowels should be opened by giving epsom salts or raw linseed oil and it is also important to apply hot applications to the sides. Mustard and water or home liniments applied twice daily give relief. Water may accumulate in the chest; if so, give digitalis or iodide of potassium, or it may be necessary to tap the chest.

BRONCHITIS.—Bronchitis is an inflammation of the mucous membrane lining the bronchial tubes. These tubes are formed by the branching of the lower end of the windpipe and they themselves branch in the lungs.

CAUSES.—It is often the result of an inflammation of the upper air passages when a recovery did not take place, or it may be the result of colds or exposure.

SYMPTOMS.—The animal breathes with a sort of grunt, refuses food, has a cough and if you listen at the breast a roaring sound is heard. The pulse quickens somewhat and the temperature rises.

TREATMENT.—Allow fresh air but keep the body warmly covered and free from draft. Place the horse in a comfortable stable. The breast should be rubbed twice a day with mustard and water or with some good home liniment. Give one dram fluid extract belladonna, one-half ounce tincture of opium and one ounce alcohol in a pint of cold water at a dose three or four times a day. Steam with creosote or carbolic acid twice a day and keep the bowels open.

PEOPLE'S HOME REMEDIES FOR BRONCHITIS.—

1. **Steaming with Carbolic Acid.**—Put a tablespoonful of carbolic acid into a bucket of hot water and have the horse inhale the vapor. In bad cases this treatment should be repeated every hour. Stirring the water will cause it to give off more steam.

HEAVES—BROKEN WIND.—Heaves in horses is closely allied to the disease asthma in man but the symptoms seem to be much more continuous.

CAUSES.—Feeding on clover or musty, badly-cured fodder of any kind is likely to bring on heaves; besides, feeding too much bulky non-nutritious fodder and over exerting the animal when the stomach is very full are common causes of broken wind. Diseases of the lungs sometimes terminate in heaves. This disease sometimes attacks two-year-old colts; however, it is principally a disease of middle-aged or old horses. A horse with a small chest and of delicate constitution is most liable to heaves and it is this kind that seems to come honestly by heaves.

SYMPTOMS.—The nostrils usually stand open, the horse has a short, dry cough and a wheezing noise is heard in the throat. There is a sort of double lift to the flanks every time the animal breathes. Nearly every broken-winded horse has more or less indigestion, is inclined to eat far too much, bloats and passes gas and, strange to say, is fond of filthy fodder. The muscles of the body are generally soft and flabby and if put to very hard work it loses flesh. This is perhaps the result of both stomach and lung trouble. The symptoms I have mentioned can be greatly modified by limiting the amount of bulky food and water; also by giving drugs which have a sedative effect.

TREATMENT.—If it is possible to ascertain what has caused the heaves and remove that cause the ailment can soon be somewhat relieved, but it is well to limit the amount of bulky fodder and it should be of good quality and all the better if it is wet with lime water. This is made by dropping a pound or two of lime into a bucket of water, pouring off the first water, then refilling and continuing to refill until the lime is all dissolved. Water will take up only so much lime and no more so there is no danger of making it too strong. Keep the bowels open, give opium, belladonna, digitalis, lobelia, arsenic, stramonium and tar water. If there is much discharge, give one dram sulphate of copper at a dose twice daily. Water before feeding grain.

PEOPLE'S HOME REMEDIES FOR HEAVES OR BROKEN WIND.—

1. **Proper Feeding.**—Feed corn stalks, moist hay, carrots, beets, potatoes, etc. The hay should be moistened so as to prevent irritation. For two or three weeks give arsenic in three-grain doses twice a day. Also keep the bowels open with laxatives.

2. **Phosphorus.**—For eight or ten days give 8 or 10 drops of tincture of phosphorus in the drinking water several times a day.

3. **Ear Corn.**—Feed nothing but ear corn for six or seven months. One man says he has seen useless horses entirely cured in this way.

ROARING.—This, properly speaking, is not a disease but a symptom. It is breathing with a loud and unnatural sound, due to paralysis of the vocal cords and a sweetened condition of the dilator muscles of the larynx.

CAUSES.—There are many different causes that may produce roaring. Malformation of the air passages, nasal polypus or a closing of one nostril, will produce the sound, but in a genuine case of roaring the vocal cords and muscles are usually paralyzed or atrophied. Any irritation of the larynx that lasts very long may cause degeneration of the muscular fibres and produce roaring. Strangles (distemper) may terminate in roaring. Tight reining is another cause.

SYMPTOMS.—The symptoms are shown in most cases when the animal is exerted much. In mild cases he may not make much noise but may whistle slightly, which indicates a thickened condition of the mucous membrane of the larynx. A whistle of this kind has a right to cause suspicion for few sound horses make this noise.

TREATMENT.—Feed a good quality of food and no clover or musty, badly-cured fodder of any kind. Apply home liniments or mustard and water to the throat daily, or apply some iodine ointment. Give one-dram doses iodide potassium twice a day for two or three weeks. When the vocal cord muscles are paralyzed and much atrophied mild remedies do but little good. The operation of tracheotomy is helpful to many or a surgical operation on the throat and removing the vocal cords frequently proves successful.

HICCUGHS OR THUMPS—SPASM OF THE DIAPHRAGM—PALPITATION.—Palpitation is a sudden, violent and convulsive beating of the heart. Palpitation should not be confounded with hiccoughs or thumps for they are the result of a spasm of the diaphragm and not an affection of the heart. The causes are very similar to those that bring on congestion of the lungs and sometimes colic. Place the ear back of the heart and you will soon determine that it is not a heart beat, but a jerking sort of noise back of the heart; besides, the heart sound is usually more feeble. If the spasm is not relieved death may be the result.

TREATMENT.—Apply mustard and water directly over the seat of the noise or apply a light blanket wrung out of hot water to the chest and side, covering it with dry blankets and a rubber cover. Give one ounce sweet spirits of nitre, two drams fluid extract opium, twenty-five drops extract of digitalis and one-half dram fluid extract nux vomica in a pint of cold water every two or three hours until relief is obtained. If you have none of this medicine on hand give one-half pint of whiskey and a tablespoonful of ginger in a pint of cold water and repeat it every three hours. Avoid giving the animal large quantities of ice-cold water at a time but give ginger in the feed. He should be fed a moderate quantity of well-cured fodder and grain and exercised moderately for a week or two until he recovers. Also, avoid over exerting him.

LARYNGITIS—SORE THROAT.—The larynx is situated near the root of the tongue and upper portion of the windpipe and lies between the lower jawbones. Usually, when there is sore throat the larynx and its lining mucous membrane become inflamed. The pharynx, situated at the upper end of the gullet, is usually more or less inflamed also.

CAUSES.—Exposure to cold winds when in a heated condition or inhaling foul air, dust or poisonous gases are the causes.

SYMPTOMS.—There is always more or less difficulty in swallowing and when drinking water a portion will often be returned through the nose. There is an increased flow of saliva, sometimes external swelling of the throat, an extension of the nose, a reddened appearance of the lining membrane of the nostrils, some rise of temperature, generally a cough, and usually the animal refuses to eat dry feed.

TREATMENT.—The animal should be placed in a comfortable, clean, dry and well-ventilated stable and if convenient allowed to inhale twice a day some medicated steam; however, this is not always necessary. The animal should be supplied with plenty of cold drinking water and fed bran mash, ground grain and vegetables made moist with warm water. Dissolve one ounce chlorate of potash in one pint of water and inject some into the mouth four or five times a day. It is not good practice to drench a horse that has sore throat for fear that a portion of the drench will go down the windpipe and bring on bronchial pneumonia. Apply one part kerosene (coal oil) and five parts sweet oil or raw linseed oil or lard to the throat once or twice a day; or, apply any good home liniment, such as equal parts aqua ammonia, turpentine and sweet oil. Hot poultices or mustard and water or antiphlogistine or any vegetable poultice will have a tendency to relieve the throat. If an abscess forms it should be opened and treated as I have directed for abscesses.

PEOPLE'S HOME REMEDIES FOR PHARYNGITIS OR SORE THROAT.—

1. **Alum Water.**—Three or four times a day give a half-ounce dose of alum water which is made by dissolving an ounce of powdered alum in a quart of water.

2. **Borax Water.**—Give one ounce of borax water three or four times a day. An effective remedy. This is made by dissolving one ounce of borax in a quart of water.

PEOPLE'S HOME REMEDIES FOR PARALYSIS OF THE PHARYNX OR THROAT.—

1. **Blistering, Etc.**—Apply very mild blisters under and behind the

jaw and frequently wash the mouth with alum water, using an ounce of alum to a pint of water. Also give one-grain doses of strychnia three times a day.

PEOPLE'S HOME REMEDIES FOR ABSCESS IN THE THROAT.—

1. **Steaming with Hops.**—The ripening and discharge of the abscess may be hastened by steaming with hops; or, if no hops are at hand, hay may be used instead.

MALIGNANT SORE THROAT.—(See "Cattle Department.")

TRACHEOTOMY.—(Inserting tube in windpipe.)—Tracheotomy consists in making an opening into the trachea or windpipe to prevent death from suffocation in acute cases of throat trouble or choking. It is also resorted to with considerable success in roarers where there is a paralysis of the vocal cords or a changed condition of the throat, interfering and making it difficult for a horse to breathe freely. It is a very simple thing to perform this operation; just open the skin about two inches long, some eight or ten inches from the throat, and if the tube is going to be left in but a short time open one of the rings of the windpipe or cut out a circular piece, making a hole large enough for the tube. This tube should be clean when it is inserted; also, it should be taken out and cleaned daily. This is best done by boiling the tube for ten minutes or dipping it into a two per cent. solution of carbolic acid and water. I have often found it necessary to perform this operation in severe cases of distemper and sore throat. The operation appears to be difficult; however, it is far from it. If you are unable to secure the services of a veterinarian and you have a tube, do not hesitate to put it into the horse yourself for you may thus save the life of a valuable animal.

CATARRH.—Catarrh is a congestion, inflammation or irritation of any mucous membrane of the body. When the membranes of the head are affected it is called "nasal catarrh" and I shall now give causes, symptoms and treatment for this ailment.

CAUSES.—The most common causes are exposure of thin, weak animals to storms and cold winds and standing in drafts when in a heated condition and also inhaling dust, smoke and poisonous gases.

SYMPTOMS.—At first when the animal has just taken cold the mucous membrane is dry and parched-like; some hours later a watery discharge takes place, followed some days later by a thick, pus-like mucus. In many cases there is some loss of appetite and slight fever followed by more or less weakness.

TREATMENT.—It is important to give the animal good care and prevent his catching any more cold. He should be kept in a clean, well-ventilated stable and fed well-salted bran mashes and vegetables or any other feed that he craves, for if he has much fever he will refuse grain. I have seen many cases greatly benefited by steaming the head. For this purpose add some creosote or carbolic acid to boiling water, a teaspoonful or two to a bucket of water. A teakettle is very convenient for this work. Sometimes buildings are fired through carelessness in steaming. Use an alcohol or kerosene stove or lamp to heat the water and be careful. Give a tablespoonful of the following compound powder at a dose in feed or with a spoon three times a day. Of sulphate iron, ground gentian, ginger and nitrate potash, take equal parts by weight. If the bowels are costive give eight ounces raw linseed oil daily until they open. If the horse coughs much give a

tablespoonful of laudanum and a teaspoonful of chloroform in three ounces of sweet oil three times a day until the cough is relieved.

PEOPLE'S HOME REMEDIES FOR CATARRH IN THE HEAD OR HEAVES.—

1. **Western Hay.**—Feed western prairie hay with which the resin plant is mixed.

2. **Steaming.**—Have the horse inhale steam from a bucket of hot water. The steam should be inhaled five times a day and from fifteen to twenty minutes each time.

NASAL GLEET.—Nasal gleet is a chronic catarrh of the nose and upper air passages and is usually the result of neglected cases of cold in the head or simple catarrhal fever.

CAUSES.—Nearly all cases of nasal gleet are the result of fractures, diseased roots of grinder teeth, diseased bones, or neglected catarrh.

SYMPTOMS.—This ailment is attended by a nasty discharge from one or both nostrils and is often mistaken for glanders. When the breath is offensive it indicates a diseased tooth or bone. This is not a contagious disease.

TREATMENT.—The most important step to be taken in the treatment of nasal gleet is to ascertain the cause, if it is possible to do so, and remove it. When the discharge comes from a diseased tooth, pulling it out is the remedy. If a bone is diseased, scrape off the diseased part and it will heal. Dissolve six drams boric acid in a quart of water and wash out nose twice a day. Give $\frac{1}{2}$ ounce sulphate iron and two drams nitrate potash in feed twice a day for twenty days; and, if not then well, give five one-dram doses sulphate of copper in feed three times a day. I have often found it necessary to cut (trephine) through the bone of the face in order to wash out the nose and head thoroughly. This is the only way to bring about a recovery in bad cases.

PEOPLE'S HOME REMEDIES FOR CHRONIC NASAL CATARRH OR NASAL GLEET.—

1. **Sulphur.**—Burn sulphur in the stable so that the horse will inhale the fumes but be careful not to suffocate the animal.

2. **Lime.**—It is well to sprinkle chloride of lime about the stable and to put some under the hay in the manger so that the horse will inhale the fumes while eating.

3. **Copperas.**—Give a teaspoonful powdered copperas at a dose in feed two or three times a day.

MALIGNANT CATARRH.—(See "Cattle Department.")

CHRONIC COUGH.—Chronic cough very often exists without any apparent or known cause. It may also follow sore throat and may be associated with chest diseases, indigestion, stomach worms, bots, derangement of the pneumogastric nerve, etc.

CAUSES.—It very often follows distemper, influenza, sore throat, pneumonia, enlarged glands of the throat and the feeding of badly-cured clover, musty fodder and bulky non-nutritious food that deranges the stomach and digestive organs.

SYMPTOMS.—Coughing much without any discharge whatever from the nose or without any apparent cause is sufficient evidence that it is a chronic ailment. Furthermore, if it has lasted long it must necessarily be

chronic. By applying slight pressure to the throat the animal will usually hack and cough several times.

TREATMENT.—It is well to keep in mind that every good cough remedy used and prescribed in human practice is equally as effectual in veterinary practice. However, the dose should be from six to twelve times as much. Fairly good results follow giving $\frac{1}{2}$ dram gum camphor, $\frac{1}{2}$ dram powdered digitalis and $\frac{1}{2}$ dram powdered opium, at a dose, either in feed or with a spoon two or three times a day. Or, give two drams muriate ammonia, $\frac{1}{2}$ dram powdered lobelia and two drams of powdered saltpeter at a dose in feed or with a spoon. Or, dissolve $\frac{1}{2}$ dram iodide potassium in $\frac{1}{2}$ pint of water and pour over feed twice a day. The same external applications that I have recommended for sore throat should be used occasionally in the treatment of chronic cough.

PEOPLE'S HOME REMEDIES FOR COUGHS, HEAVES AND ALL THROAT AND LUNG TROUBLES.—

1. **Coughs, Heaves, Etc.**—Give two tablespoonfuls of powdered licorice, a tablespoonful ground ginger, a teaspoonful powdered digitalis leaves, one-half teaspoonful powdered lobelia and one-third of a teaspoonful of powdered opium at a dose in damp feed night and morning. Also wet his fodder with lime water, which is made by adding a pound of lime to a bucket of water. Pour off the first water which is a little bitter, then refill and use.

PNEUMOTHORAX—AIR OR GAS IN THE CHEST.—This is generally due to a changed condition of the liquid, having undergone some sort of decomposition in the chest. It is also the result of chest punctures or broken ribs.

TREATMENT.—Whenever fluid, air, or gas can be drawn from the chest this should be done. I have obtained good results by injecting one part carbolic acid and two hundred and fifty parts water into the chest after the operation of tapping.

HYDROTHORAX—WATER IN THE CHEST—DROPSY OF THE LUNGS.—Hydrothorax is not a disease but a result of other ailments such as pleurisy, pleuro-pneumonia, heart trouble or debilitating diseases.

SYMPTOMS.—Whenever water commences to accumulate in the chest, the animal very often seems to revive and appear better; however, the good symptoms are not always lasting for the water must soon be absorbed or the case ends in death. Listen and you can hear a splash in the chest and if there is much water it must be let out or death soon follows. Even tapping very often gives only temporary relief. Give the animal two drams of fluid extract of digitalis and two drams of iodide potassium two or three times daily.

NASAL POLYPUS.—A nasal polypus is a small tumor in the nostril, very much the shape of a pear or top and it very often interferes with breathing.

CAUSES.—It is not always easy to tell what causes them; however, they are often the result of wounds or some foreign substance lodging in the nostril and setting up irritation which is followed by these growths.

SYMPTOMS.—Very often the first symptom is a slight discharge from the nostril and this discharge is frequently mixed with blood. The horse breathes with some difficulty, making a snuffling sort of sound.

TREATMENT.—These tumor-like bodies should be removed and this

is best done with a pair of forceps or pincers. When removed they are likely to bleed freely. This hemorrhage is best stopped by applying one part tincture of iron and twelve parts water; or, dissolve two ounces of alum in a pint of water and apply by saturating a sponge or cotton and holding it on the wound. Either hot or cold water will have the same effect. It is well to keep in mind that a nasal polypus should be removed as soon as it is noticed, for the operation is much more easily performed when it is small and there is much less danger from hemorrhage.

DISEASES OF THE URINARY ORGANS.

(Including Diseases of the Kidneys and Bladder.)

KIDNEY AILMENTS.—Diseases of the urinary organs of horses are not nearly so common as in man. However, we do find them prevailing in certain localities where limestone is abundant and where resinous plants grow; we also find kidney troubles caused by horses pasturing on damp low lands and by eating a poor quality of fodder. We also find kidney ailments coming on for want of enough water. It is often brought on from giving drugs which act harshly on the kidneys, or from giving diuretic medicine for too long a time. It may result from liver disease. Far too many horse owners have wrong beliefs regarding kidney diseases of the horse for they are not nearly so common as supposed.

SYMPTOMS.—The general symptoms of kidney disease, if it is acute, are a straddling gait with the hind legs, tender loins and a straining to pass urine. The urine is either passed with difficulty or it dribbles away. In horses and cattle the urinary organs can very often be examined by introducing the hand into either the bowel or vagina. A certain class of urinary ailments can be diagnosed only by making an examination of the urine.

PEOPLE'S HOME REMEDIES FOR RETENTION OF URINE.—

1. **Turpentine.**—Mix one part of turpentine with five or six times the quantity of sweet oil and apply to the small of the back once a day. This remedy can be depended upon in every case.

2. **Nitre.**—Give one ounce of sweet spirits of nitre every hour until relieved and rub the back with spirits of camphor.

3. **Nitre and Spanish Fly.**—In severe cases of retention of urine give 1½ ounces of sweet spirits of nitre mixed with five or ten grains of Spanish Fly. Repeat every hour until relief is obtained. It is also well to rub the back with a mixture of ginger and mustard.

INFLAMMATION OF THE BLADDER—CYSTITIS.—(See "Cattle Department.")

PEOPLE'S HOME REMEDIES.—

1. **Borax, Etc.**—The bladder should be washed out twice a day with a solution of a dram of borax to a quart of water. Give linseed tea or slippery elm tea in the drinking water. Apply mustard over the loins and to the back part of the abdomen. The diet should be light, such as roots, bran mash, grass, etc.

NEPHRITIS—ACUTE INFLAMMATION OF THE KIDNEYS—ALSO CHRONIC INFLAMMATION OF KIDNEYS.—Inflammation of the kidneys is not a very common ailment in horses and it is not by any means the most common disease of the kidneys. It is most likely to occur in the chronic form and we often find only one kidney involved.

CAUSES.—Exposure to cold wet rains, sleet, and cold wind storms, especially after an exhaustive drive, causes the animal to chill suddenly after being over-heated. It also follows giving large and repeated doses of saltpeter, resin and other drugs that act on the kidneys. It sometimes follows

the application of fly blisters to the loins on account of an absorption of cantharides.

SYMPTOMS.—Very often azoturia is confounded with nephritis. The animal has more or less fever, the heart action is quicker, the animal exhibits some pain, very often turning the nose to the seat of this pain and very often pointing his nose to his kidneys. Uremic poisoning may set in and if so the animal acts as if intoxicated. Pressure applied to the loins is not a reliable test. Passing the hand into the rectum and finding undue heat in the loins leads one to suspect nephritis. In well marked cases casts of the kidney tubes may be discovered in the urine.

TREATMENT.—First of all lessen the work on the kidneys by stimulating the bowels and skin glands into greater activity. Give fifteen drops of tincture of aconite at a dose four or five times a day. Apply mustard and water to the loins or apply warm antiphlogistine. If the animal suffers much pain give one-ounce doses of laudanum every two or three hours, also give one ounce of hypo-sulphite soda three times a day for four or five days. Feed a good quality of food but not too much of it.

DIABETES INSIPIDUS—DIURESIS—PROFUSE STALLING.—

Excessive secretion of urine is an indication that the animal suffers from diuresis.

CAUSES.—The reckless use of drugs and dosing of horses with quack nostrums will bring on this ailment; however, feeding musty and badly cured fodder or grain, or bran that has soured and heated is a very common cause. New oats, distillery refuse and plants which act severely on the kidneys bring it on. I have seen a whole flock of sheep and all the horses in a large stable suffer from eating badly cured fodder or from eating acrid plants. Exposure to wet and cold, also feeding too much salt and thus irritating the stomach and increasing the thirst will sometimes bring on this disease.

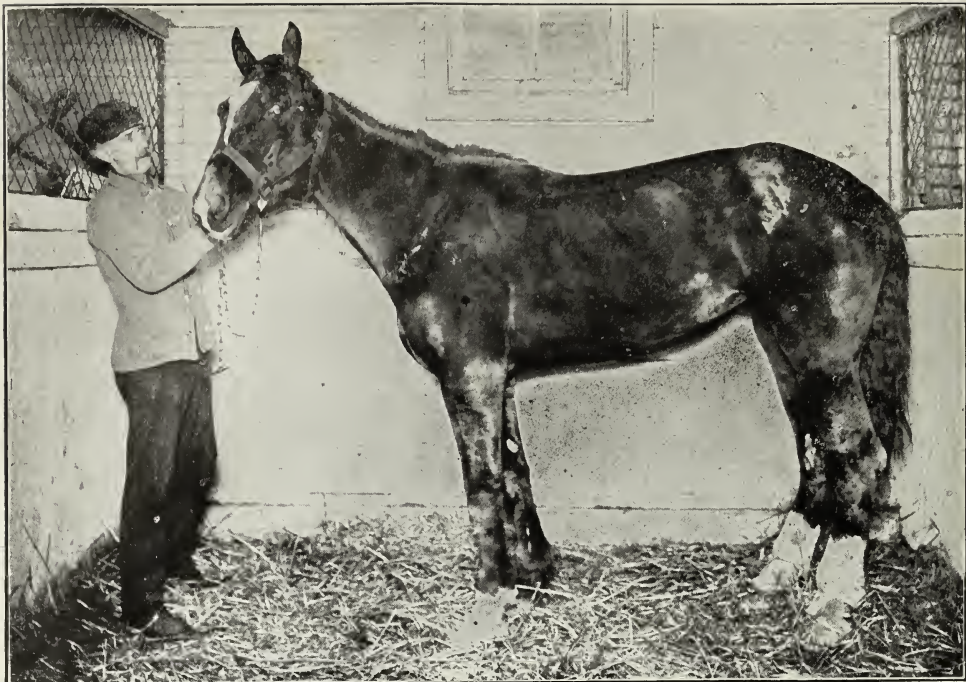
SYMPTOMS.—There is a frequent passing of a large quantity of pale urine which is of very low specific gravity; there is a falling off in condition and the horse grows weak and perspires when not exerted very much. The urine has no odor and contains very little solid matter but a great deal of it may be passed in a day. The skin usually becomes dry and harsh, he appears hide-bound and has the appearance of ill health but may live for months.

TREATMENT.—In the early stages a recovery soon follows a removal of the cause and a change of food. Feed well cured fodder, keep the bowels open, feed no new hay. Give two drams iodide of potassium daily, also give two drams of phosphate of iron, two drams gentian and two drams powdered cinchona at a dose in feed twice a day. Give plenty of hearty food and a recovery will take place much more quickly. In some cases I have given creosote with good results; however, this is not always necessary. If occurring in the winter, be sure to ventilate your stable, let in fresh air day and night and keep the stable clean and free from foul gas.

BLOODY URINE—HÆMATURIA.—Hæmaturia, or blood in the urine, is quite common in cattle and sheep, but not in horses.

CAUSES.—It is generally the result of a sprain or injury but is sometimes due to calculi or stone in the bladder or kidneys or to fracture of the backbone.

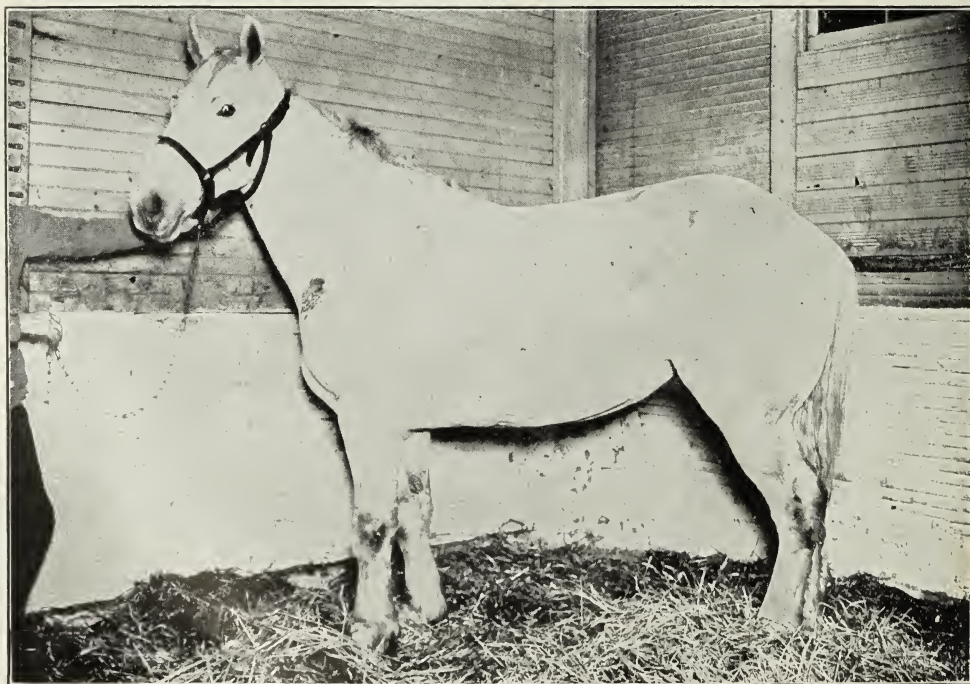
SYMPTOMS.—If the blood comes away with the urine and pretty well mixed it is generally kidney hemorrhage, but if there are clots it must be coming from other parts.



PNEUMONIA OR LUNG FEVER.

A horse with pneumonia always stands up while a cow with pneumonia always lies down. This six-year-old mare is recovering from a bad attack of pleura-pneumonia. She lost 200 lbs. in weight in 10 days. Note the anxious eye and haggard appearance. Forelegs are held far apart.

(Photographed at Dr. Fair's Veterinary Hospital especially for this book.)



AZOTURIA.

This 1800-lb. draft mare took Azoturia, became paralyzed, laid in a Cleveland street for four hours, was hauled in an ambulance to Dr. Fair's Veterinary Hospital, remained down for three days and when photographed was recovering but still weak in left hind leg and swollen on rump. Also a large sitfast (fibrous tumor) was removed from the shoulder while at the hospital. Azoturia is caused by over-feeding and under-exercising.

(Photographed at Dr. Fair's Veterinary Hospital especially for this book.)

TREATMENT.—It is important to remove the cause. Also change the feed and give a tablespoonful of tincture of chloride of iron in a pint of water two or three times a day, or give a teaspoonful fluid extract ergot two or three times a day.

PEOPLE'S HOME REMEDIES.—

1. **Slippery Elm Tea and Lithia.**—Give freely of slippery elm tea and then give one-half ounce of lithia. If the discharge is excessive apply cold water to the loins.

AZOTURIA—PARTIAL PARALYSIS OF HIND QUARTERS.—Azoturia belongs to the class of dietetic diseases, usually resulting from too generous feeding of concentrated food without giving the horse sufficient fresh air and exercise. It may be defined as a hyper-nitrogenous condition of the blood and whole system. This excessive loading of the blood with nitrogen seems only to take place when the animal is stabled, kept quiet and over-nourished on grain. When the blood is charged with an excess of nitrogen and carried through the system it seems to be inclined to settle in the myolemma or coverings of the deep muscles of the haunch. This seems to cause a partial or complete loss of motor power in the hind quarters. This disease is known by many different names such as azoturia, paralysis, kidney disease, spinal disease, hysteria, enzootic hæmaturia and hæmaglobinuria. However, it is most commonly known by the name of "azoturia."

CAUSES.—It can be safely stated that this disease is caused by too much albumen and this albumen is produced by over-feeding on grain when the horse is idle and not exercised, and by the kidneys acting in an improper manner. The system seems to load with urea and hippuric acid which are secreted by the liver, and the nervous system, no doubt, becomes affected by the urea. Now when the horse is exercised and the blood circulates rapidly, it being highly charged with albumen, it undergoes rapid oxidation, exerting a peculiar affect on the muscles of the back and hind quarters and causing either partial or complete loss of motion. It is supposed to be a disease of the kidneys or spinal cord but this is not correct for it is more nearly a disease of the liver; the liver fails to transform albuminoids into urea and fills up the gland and the circulating fluid with partially oxidized products which pass off later by the kidneys. Quick or violent exercise is far more likely to bring on an attack than moderate or slow exercise. The urea no doubt acts upon the nerves, bringing on a spasm of the muscles of the hind quarters. When the stomach and bowels are very full and the horse put to fast or hard work this disease soon develops, especially if his kidneys are not active and the bowels are costive. Azoturia may occur at any season of the year; however, it is much more common in the cold winter months than in summer; as a rule, a rest of a day or two or more is required to bring it on. It rarely comes on without exercise; however, I have known it to occur without it.

SYMPTOMS.—The symptoms of azoturia are unlike those of other diseases and are very plain. After a few days rest the horse is brought out of the stable, having been well fed on grain and not exercised. He seems in fine spirits, but before going far he becomes dull and sluggish, perspires freely, shows some stiffness in the loins and hind quarters and steps as though walking on a rolling stone. The animal walks stiff; knuckles on the fetlock, usually worse on one than the other and soon becomes so crippled that he can go no further. He then either remains standing still or falls down, suffering great pain. His pulse quickens and he frequently rolls, very often making un-

successful efforts to get up. He is able to do so in front but is partially paralyzed behind and is only able to rise part way up. The muscles of the haunches contract firmly and generally enlarge. Azoturia occasionally affects the fore quarters and not the hind limbs. This form I do not regard as being nearly so fatal. When the loin muscles are much involved the animal suffers the most pain. This form is quite often thought to be broken back; however, if you will inquire into the history of the case you will soon learn it is a case of azoturia and not fractured back.

TREATMENT.—First of all let me say this is a preventable disease but not by any means always curable. This being the case, why should horse owners waste their feed on idle horses when the food is only acting as a slow poison? It is unnecessary to feed idle horses more than one-quarter the quantity of grain which they require when doing full work. Thin horses seldom suffer from azoturia. Clear out the bowels promptly by giving a full dose of cathartic medicine. Aloes five drams, podophylin $\frac{1}{2}$ dram and ginger 2 drams may be given at one dose, either in pill form or as a drench. Or, give one quart of raw linseed oil; or give epsom or Glauber's salts. Also give copious injections of soap suds with oil added. Give $\frac{1}{2}$ -ounce doses of bromide of potash every four hours. Draw off the urine if the horse is unable to pass it; here is where many geldings are ruined. It is easy work to pass a catheter in the mare but not always so with a gelding. I find in most cases the animal will pass his water if let alone. Hot applications to the back and loins are very beneficial. It is of the utmost importance to keep the horse from going down; therefore, if the animal were stopped and stabled when the attack first comes on, few deaths would result. If the horse gets down, try to keep him from lying flat; prop him up, hand rub his cold legs and ears, cover body with enough blankets to keep him warm and rub his back with mustard and water or some good home liniment. Let him drink plenty of water but it should not be too cold. Keep him quiet and comfortable. When the proper time comes, I have used slings to good advantage, but it does harm to sling a horse that is wholly unable to stand alone. The bowels, kidneys and skin should be kept moderately active while the animal is recovering and the horse should be fed sloppy mash, some vegetables, and well cured hay or grass. In conclusion let me say—Exercise all heavy breeds of horses, be sure they have fresh air to breathe and when idle are fed not more than one-fourth or one-third the amount of grain required when working. Stop immediately when you notice your horse showing dullness, perspiring freely and crippling behind when going slow soon after leaving the stable, and especially if he has been in the stable resting for two or more days. By observing what I have said you need have no fear of losing any horse with this fatal ailment.

PEOPLE'S HOME REMEDIES FOR AZOTURIA.—

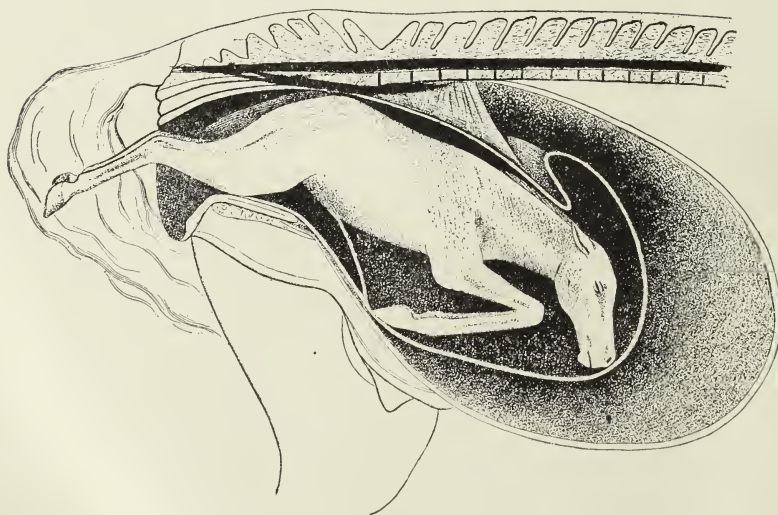
1. **Hot Fomentations, Etc.**—First give a dose of from 4 to 6 drams of aloes and then give 4 drams of bromide of potassium mixed with an ounce of sweet spirits of nitre. The nitre and potassium may then be given every five or six hours if required to quiet the nervous excitement. Also apply hot water fomentations over the loins. The horse should be stopped immediately when an attack of azoturia comes on.

GRAVEL—CALCULI—STONE IN THE BLADDER.—("See Cattle Department.")

INCONTINENCE OF URINE—ENURESIS.—(See "Cattle Department.")



Vertebro-Sacral Presentation.



Lumbo-Sacral Presentation.

POSITIONS OF FOAL AT BIRTH.
(Normal Presentations.)

DISEASES OF THE GENERATIVE ORGANS OF BOTH THE HORSE AND MARE.

(Including Foaling and Its Attending Difficulties.)

BARRENNESS.—Failure to breed is quite often due to an acid secretion of the genital organs or it follows a retention of the afterbirth or is the result of infection where the germs of contagious abortion have been picked up. It may also be on account of an abnormal condition of the sexual organs of either male or female. An acid condition of the womb and vagina is quite common in mares and cows and when it exists conception will not as a rule take place. Animals that suffer from infectious abortion germs have a catarrhal inflammation of the womb and vagina; therefore, they are not so likely to become pregnant as well animals, and if they do, are likely to have a miscarriage. Old animals are often barren and some young ones because of excessive service. Closing of the neck of the womb prevents many mares from getting with foal. The standing wide open of the neck of the womb prevents some mares remaining pregnant. Any unnatural discharge coming from the womb generally prevents conception and also irritates the neck of the womb and is inclined to grow worse if not corrected.

TREATMENT.—If it is due to an acid condition, dissolve one ounce of baking soda in a quart of clean water and wash out the vagina daily for two weeks or longer; or, put a tablespoonful of carbolic acid into three pints of water and wash out the vagina daily until she gets with foal, but do not mate the mare until you know she is well and has been opened within a few hours before she is bred. In opening the neck of the womb use clean hands with finger nails cut short, or use a rubber glove; or, use a steel sound, which is the best. The yeast treatment is quite effective in curing barrenness in horses and cattle when the disorder is due to an acid condition of the genital tract. The solution is made as follows. Put two heaping teaspoonfuls of yeast into a pint of boiled water, set the solution near the stove or in the sun and maintain at a temperature of about 70 degrees, for four or five hours; then add three pints of boiled water and keep it warm for five or six hours. By this time the solution will have a milky appearance and is ready for use. Flush the parts first with warm water, then inject the yeast. The animal should be mated from two to six hours after the vagina has been washed out with clean warm water and the yeast mixture applied. I have prescribed this treatment to a great many horse and cattle breeders who have tested its merits to their satisfaction. However, in cases where the animal does not come in heat it has no value. For such give twenty grains of powdered cantharides or one dram of tincture of cantharides at a dose in feed night and morning. This medicine I have found acts as well as any in stimulating the generative organs into action, but it is by no means a reliable remedy.

ABORTION—MISCARRIAGE—SLINKING OF FOAL.—This consists of the expulsion of the foetus, generally before it can live, from the womb (uterus); however, the word "abortion" is used wrong many times in speak-

ing of mares or animals which miscarry before the proper time for parturition arrives.

CAUSES.—Injuries of many kinds may produce abortion. Among the causes are blows or pressure on the abdomen, disease of the abdominal walls, acute indigestion, slips, falls, exhaustion, weakness, influenza, severe exertion, too active cathartics, death or deformity of foetus, ergotized food, smutty feed, impure water, germs in the uterine tract and also fright and bad odors.

SYMPTOMS.—In the early stages of gestation it may take place without warning and no person know of it, for it does not make the animal very sick. The animal coming in heat again is of course evidence that she has aborted. A swelling of the external generative organs and a filling of the udder should prove a sort of warning. A discharge from the vagina during pregnancy is an indication that the mare may have had a miscarriage.

TREATMENT.—Prevent as many of the causes which I have mentioned as possible and it will go a long way toward preventing abortion. When it follows an accident that is not too severe the animal soon recovers, even if very little is done in the line of treatment other than good care. The most important thing to consider is whether the miscarriage is due to infection or injury. If an infectious kind be in your stable, disinfectants should be used freely to stamp out the contagion and remember that cows and sheep very often infect mares. If the bowels are too loose and the labor pains come on without much relaxation, give one ounce of tincture of opium at a dose three times a day. If she loses her colt, burn it; wash stalls with one part carbolic acid to fifty parts water and also spread copperas on the floors; or, dissolve the copperas in water and sprinkle it on stalls and floors. Let her pass two or three periods of heat before having her served. Give tonics such as iron, gentian and ginger.

SPAYING.— (See "Cattle Department.")

LEUCORRHEA—WHITES.—This is a disease affecting the mucous membrane of the uterus (womb) and sometimes of the vagina. Whenever there is an outpouring of a milky-looking discharge from the vagina there is always a sort of sub-acute inflammation of the parts which may be the result of a slight irritation caused by a retention of a portion of the placenta or after-birth. The disease is most common in old and debilitated animals.

SYMPTOMS.—There is always a white discharge issuing from the vulva, enough in many cases to soil the thighs. Ovarian diseases sometimes give rise to leucorrhea. In some cases large quantities of mucus accumulate in the uterus and come away when the animal is exercised. This is especially likely to be the case if the animal stands with the forefeet a little lower than the hind ones.

TREATMENT.—The treatment of leucorrhea should be both constitutional and local and the food should be highly nutritious, easily digested, laxative in character and liberal in quantity. Give three drams powdered sulphate iron, two drams of ground gentian and one-half dram of iodide of potassium at a dose in feed three times a day. Dissolve two drams permanganate of potash or two ounces of carbolic acid in a gallon of tepid water and daily wash out the uterus and vagina with the aid of a rubber tube and funnel. Or, dissolve one-quarter pound of alum or two ounces of sulphate of zinc in a gallon of water and use in the same way. It is well to keep in mind that after using active astringents for a few days the solution should be gradually weakened by adding water. There are many other excellent remedies, both in

the line of tonics and astringents, that are sometimes as good as those I have mentioned, but they are more expensive.

INFLAMMATION OF THE VAGINIA—VAGINITIS.—(See "Cattle Department.")

METRITIS—INFLAMMATION OF THE WOMB.—Metritis or inflammation of the womb is not a very common ailment of the mare but is quite common with cows.

CAUSES.—When inflammation of the womb occurs in the mare it often follows using force or the improper use of instruments when assisting in the delivery during parturition and it may come from an invasion of micro-organisms which make their way into the uterus soon after foaling or it sometimes results from exposure and want of proper care.

SYMPTOMS.—The mare shows more or less uneasiness, exhibiting a disposition to paw and to lie down and roll. She keeps the back somewhat arched and the temperature always goes up. There is generally loss of appetite but great thirst.

TREATMENT.—It is generally good practice to give twenty drops of tincture of aconite in some cold water every three hours until the fever reduces; or, giving one dram of acetanilide every four hours will also reduce the fever; or, give $\frac{1}{2}$ ounce of saltpeter three times a day in the water. The pain should be subdued by giving tincture of opium (laudanum) in one-ounce doses every two hours until relieved. Or, give one dram fluid extract belladonna every two hours; or, give three grains morphine hypodermically. The latter will act quickly in relieving the pain and it should be repeated if necessary. Mustard and water applied over the back and around the flanks and abdomen are helpful. Liniments are also proper remedies but severe blisters are not necessary. The womb should be washed out with one part carbolic acid, two parts glycerine and fifty parts water which is of the same heat as the body. Any of the coal-tar disinfectants put into forty parts water will help. Or, dissolve two ounces sugar of lead in one gallon of tepid water and use twice daily. It is well to remember that the mare is more easily hurt during parturition than the cow; therefore, avoid using much force and be sure if you use instruments to have them perfectly clean. Also, the hands of the operator should be clean and his nails should be cut short and be made smooth.

RUPTURE OF THE WOMB.—(See "Cattle Department.")

EVERSION OF THE UTERUS OR WOMB.—This consists in the womb turning inside out and protruding through the vagina. It most frequently follows foaling when the after-pains continue. Or, it may be caused by the animal's standing with the hind parts too low.

TREATMENT.—The womb should be kept clean and this is best done by placing a sheet under it. Place her hind parts twelve or fifteen inches higher than the fore parts or even higher than this; if she strains much give one-ounce doses of chloral-hydrate every two hours until she becomes quiet. Or, give one-ounce doses of tincture of opium every thirty minutes until she ceases to strain. Be sure that the afterbirth is not attached to the uterus when the parts are returned to place. Also notice that the womb is not ruptured for if this is the case it should be stitched carefully with catgut and treated with antiseptic washes. A surcingle should be placed around the flank of the mare and she should be fed nutritious and easily digested, but not too much, bulky food, and should be kept in a position with the forefeet several

inches lower than the hind ones. It is very often necessary to put a few stitches in the upper part of the vulva and leave them in a few days. Besides, she should be given opium, chloral, belladonna or morphine to keep her from straining. Sometimes in returning the everted womb a rupture of the womb or vagina is made unless it is done cautiously. This occurs as a result of pushing too hard against the everted parts with the ends of the fingers instead of the flat of the hand or fist.

EVERSION OF VAGINA.—This consists in a turning out of the vagina, caused very often by standing with the hind feet considerably lower than the fore ones and also by crowding the bowels too full. Constipation is another common cause of eversion.

TREATMENT.—Place the mare in a position in which the hind parts are not less than four or five inches higher than the fore parts. Limit her supply of bulky food and dissolve one ounce of alum and one-half ounce of sugar of lead in a quart of warm water and apply to the everted parts ten or twelve times a day. Or, apply one part carbolic acid and fifty parts water three or four times a day. The parts should be returned to place without injuring them, a few stitches taken in the upper part of the vulva to hold them in place, a surcingle applied to the flanks and it may be necessary to give her ounce doses of laudanum to prevent straining.

CLEANING—REMOVING PLACENTA OR AFTERBIRTH.—When mares foal too early, the result of injury or infectious abortion, they do not always clean properly, the afterbirth remaining inside the womb with perhaps a portion hanging out of the vagina. If the bowels are not open give one pint of raw linseed oil and one dram of fluid extract of belladonna, one dose **only**. Or, give injections of warm soap suds to empty the rectum, but if her bowels are moderately moist do not give more than one-half pint of oil and in some cases it is best to give none. If the afterbirth does not come away in twenty-four hours, remove it with clean hands, but the operator should have no sharp nails and the hand should be smeared with one part of carbolic acid and twelve parts of sweet oil. Also, give the mare twenty drops of carbolic acid and a teaspoonful of powdered saltpeter at a dose once a day for ten days and if a discharge continues inject one part carbolic acid and fifty parts water; or, dissolve one ounce of alum in a quart of water and inject once a day until she is well.

AFTER-PAINS FOLLOWING FOALING.—There are cases where the labor pains continue after the foal has been expelled from the womb, and in order to avoid making mistakes in giving quieting drugs you should pass the hand into the uterus and ascertain whether or not there is another colt in the womb and if this is the case allow the pains to continue until the foal is expelled, then perhaps it will be necessary to give a stimulant, such as whiskey or wine. But if the after-pains are the result of nervousness, give one-half ounce doses of chloral-hydrate in one-half pint of cold water every hour or oftener until the mare gets relief. Or, give one ounce of tincture of opium (laudanum), one-half ounce of fluid extract of ginger and four ounces of whiskey in a pint of cold water every hour until pain ceases. Cover her back and loins with plenty of clothing. If the womb tends to evert place her hind quarters a foot higher than the fore parts; or, stitch the upper part of the vulva and apply a surcingle around the flank.

BLEEDING AFTER FOALING—FLOODING.—Considerable hemorrhage sometimes follows foaling on account of the womb's being injured or

everted and its failure to contract after its relaxed state. By passing the hand into the uterus it will be found full of blood clots.

TREATMENT.—Give one-ounce doses of fluid extract of ergot every thirty or sixty minutes until bleeding ceases, but be sure to use fresh ergot for this drug becomes worthless after it is about a year old.

DROPSY—SWELLING OF THE BELLY BEFORE FOALING.—

This is a condition that exists very often in brood mares and commences three or four weeks before foaling time and many very good mares are troubled in this way without showing the slightest symptoms of disease. It is a result of improper elimination of the fluid from the body.

TREATMENT.—Give the mare more exercise, change her feed, keep her bowels moist by feeding some well-salted bran mash or vegetables, also give one-ounce doses of either fluid extract of buchu or powdered buchu in her feed once or twice a day before foaling and continue the treatment for a few days after foaling.

GARGET—MAMMITIS—INFLAMMATION OF THE UDDER.—

Mammitis, inflammation of the udder, or garget, is when an inflammation takes place in the glands that secrete the milk.

CAUSES.—The common causes are injuries, the colt not sucking properly, lying on cold damp ground, or bacterial infection through the teat opening.

SYMPTOMS.—Either one or both sides of the udder become hot, tender and inflamed; a watery fluid is passed instead of milk; the mare walks with a straddling gait and sometimes she loses her appetite and has fever. In some cases pus comes from the udder and in other cases an abscess forms in the bag, requiring opening.

TREATMENT.—If her bowels are costive, give one-quarter pound of epsom salts every six hours until they open. Give one dram of fluid extract of belladonna and ten drops of tincture of aconite four or five times a day; also give her a teaspoonful of powdered saltpeter twice a day. Foment the bag with hot water and apply equal parts of extract of witch hazel, spirits of camphor, alcohol and sweet oil; or, apply hot linseed oil. I frequently give them two-dram doses of fluid extract of phytolacca root (poke) three times a day and apply extract of phytolacca one part and vaseline eight parts to udder twice a day. In giving this drug, large doses very often act the best and three or four times the quantity I have prescribed may be given with safety. However, giving two drams every two or three hours is a better way to medicate than to give large doses once or twice a day.

MILK FEVER—PUERPERAL FEVER.—This is technically called "puerperal fever" and is a sort of fever occurring two or three days after foaling. It is always made worse by too much exercise, over exertion or exposure to storms.

SYMPTOMS.—There is an increase in temperature, quick pulse, quick breathing, cold ears and legs, costive bowels and highly colored urine. The udder is inclined to be inflamed and to secrete very little, if any, milk. This ailment is most likely to affect a mare after having had her first colt.

TREATMENT.—Place the mare in a warm, comfortable place, bandage her legs, clothe her body and treat her much the same as for mammitis.

BLEEDING FROM THE NAVEL.—(See "Cattle Department.")

INFLAMMATION OF THE NAVEL URINE DUCT.—(See "Cattle Department.")

URINE DISCHARGED THROUGH THE NAVEL.—(See "Cattle Department.")

JOINT ILL.—(See "Cattle Department.")

GONORRHEA—GLEET—INFLAMMATION OF THE URETHRA.
—This ailment often follows as a result of irritants in the urine which were taken by the mouth, from excessive copulation, connection with a newly delivered female or one that has other infectious ailments, or from injury.

SYMPTOMS.—There is swelling and soreness in the sheath and the horse evinces pain while passing urine. There is also a discharge of white mucus and if the membranes are examined they present a fiery and inflamed appearance.

TREATMENT.—Apply hot fomentations, give a light dose of physic and foment the parts with hot water and when suppuration takes place use a soothing or astringent injection such as is made by dissolving two drams of permanganate of potash or two ounces of sugar of lead, or one ounce of sulphate of zinc, or one hundred grains of nitrate of silver, in a gallon of water and use any one of these lotions twice a day. Also, give one-half-ounce doses of citrate of potash or the same quantity of lithia at a dose two or three times a day. Feed sparingly of vegetables, but give mostly grain and well cured fodder. In the male a stricture may occur from the use of too active astringents in the early stage of this disease. When this occurs it causes great pain in urinating and should be relieved by passing catheters or sounds of different sizes daily until the strictured portion of the urethra is dilated.

INFLAMMATION OF THE TESTICLES—ORCHITIS.—(See "Cattle Department.")

NYPHOMANIA.—(See "Cattle Department.")

CASTRATION.—Castration is usually performed during the months of spring and autumn, for it should not be done in zero weather or during the fly season. One year old is a good age to change colts and if it is done earlier, all the better, for they mind it less than when older. However, the testicles are not always down in the scrotum much before the age of twelve months and sometimes they are later in descending. It is not necessary to throw a colt or even an old stallion to castrate him, unless he is a ridgling or is ruptured. A twitch should be placed on the nose or a war bridle put on him and if necessary the forefoot should be held up by an assistant or the hind legs hopped above the hocks, leaving the connecting strap twelve or fourteen inches long. This will prevent his kicking you but should you be an experienced operator it is never necessary to go to this trouble for it requires only a minute or two to complete the operation. The scrotum should be washed off with soap and water. Then apply either alcohol or one part carbolic acid and thirty parts water. The instrument as well as the hands of the operator should be clean. Now, if not cast, make a bold incision exposing the testicle and it is wise to take out the smaller one first, cutting it off with the emasculator or ecraseur. There are many different methods of castration, such as actual cautery or burning off the cord with a red hot iron; ligature, which means to tie the end of the cord or artery to prevent bleeding; torsion, which consists in twisting off the cord and applying caustic clamps to prevent hemorrhage. The ecraseur or emasculator is preferable to the other mentioned methods. I have castrated thousands of valuable animals and employed every known method, doing it whichever way the owner requested, but if left to my choice, I always use the emasculator and seldom throw a colt down if both testicles



CASTING A HORSE.
(Photographed especially for this book.)



RESTRAINING A VICIOUS HORSE WHILE CLIPPING.

The hobbles on hind legs prevent kicking and the horse is subdued by the twitch on nose and war bridle on head. Picture shows operator clipping horse with electric machine. (Photographed at Dr. Fair's Veterinary Hospital especially for this book.)

are down and he is sound and normal. The only argument in favor of operating while standing is to prevent accident in throwing and this is not great.

RIDGLINGS.—(See "Cattle Department.")

TROUBLES FOLLOWING CASTRATION.—There is always more or less pain and always some swelling of the scrotum but if there be no loss of appetite and not much fever, pay no attention to the colt or horse. The wound should be opened and some carbolic lotion (one part carbolic acid to thirty of water) applied daily. Or, apply iodoform and boric acid in equal parts daily. There will always be some suppuration, some adhesions, perhaps some secondary hemorrhage and, if extensive, it may be necessary to cast the colt or horse and grab the end of the cord with forceps and, after pulling out the cord, tie the artery with catgut or very fine silk. Peritonitis may follow the operation from exposure; or, if the operation has not been done properly, tetanus, or lockjaw, sometimes follows this operation, but if iodoform gauze be placed in the wound and cleanliness observed at the time of the operation very few would have lockjaw following castration. Hernia is another ailment which follows castration and when it occurs treat it surgically. Abscess in the scrotum often follows and is easily treated. Open the parts freely and inject with one part carbolic acid and fifty parts water twice a day. Scirrhus cord often follows leaving the cord too long from the use of clamps in castration. The cord adheres to the skin of the scrotum and is not released and a tumor grows on the end of the cord which, when cut off, soon gets well. This is not by any means a difficult operation unless the tumor has attained very large proportions. Then it is difficult to stop the bleeding. However, if the operator is energetic and cautious he will be fairly successful. I remember of removing a very large 7-pound tumor from the trotting horse "Clingstone" which cost Mr. W. J. Gordon twenty thousand dollars. He made a perfect recovery and trotted several seasons afterwards, going faster than he had before and Mr. Gordon refused an offer of fifty thousand dollars from Mr. W. H. Vanderbilt of New York City.

SWELLING AFTER CASTRATION.—If a colt swells but little after castration and if there is but little suppuration with no loss of appetite, the case is usually doing nicely, but if the scrotum swells badly and the animal loses its appetite treatment should be prescribed.

CAUSES.—By using dirty hands and instruments and by lack of general cleanliness during the operation the parts are often infected, setting up considerable inflammation. Besides, it also follows keeping the animal in filthy quarters after he is castrated.

TREATMENT.—Keep the bowels open and the kidneys active. Open the wound in the scrotum with your finger but be sure the hand is clean and dipped in carbolized oil or disinfectant. Inject one part carbolic acid and thirty parts water into scrotum twice a day, also give a teaspoonful of powdered saltpeter twice a day. Fomenting the scrotum with hot water relieves the pain. Be sure to keep the colt in a clean stable or let him run out to pasture.

BLEEDING AFTER CASTRATION.—More or less bleeding always occurs after castration. The blood may come from veins in the scrotum or from the artery of the cord; if from the veins the blood is dark colored, but if from the artery it is of a bright red and comes away in jerks, shooting out with more force than if from a vein.

TREATMENT.—Lay a wet blanket over the loins and dash cold water on

and into the scrotum. Sometimes, pouring cold water on the loins stops it quickly. Stand the colt or horse with the forefeet lower than the hind ones. Dissolve four ounces of sugar of lead in a gallon of water and inject into the scrotum or dissolve one ounce each of alum and copperas in a pint of cold water and inject into the scrotum; then pack the scrotum with cotton saturated with either of these lotions, removing the cotton next day. If the blood comes from the artery place a twitch or twist on the colt's nose and **reach** for the cord and tie a silk thread on the artery and this will stop bleeding. Injecting equal parts of Monsell's solution of iron and water, or injecting adrenalin into the scrotum generally stops bleeding.

PEOPLE'S HOME REMEDIES.—For Bleeding from Castration.—

1. **Salt Water and Vinegar.**—Wash thoroughly with salt water and then apply vinegar.

2. **Cold Water.**—Dash cold water upon the parts. This will frequently stop the bleeding.

3. **Muriate of Iron.**—Wet pledgets of tow in muriate of iron and stuff into the canal.

4. **Cold Pack on Back.**—Place a wet towel or two on his loins and keep them wet with cold water.

5. **Tying.**—Tie a string tight around the tail.

DISEASES OF THE SKIN.

(Including Scratches, Grease Heel, Mange, Surfeit, Hide-Bound, Warts, Etc.)

SCRATCHES—MUD FEVER—CRACKED HEELS.—This is a condition common among race horses, affecting runners, trotters and pacers. It may be defined as an inflammation or irritation of the skin, brought on by washing or showering the legs with cold water or dirty soap suds. The heavy breeds of horses are no doubt more liable to cracked heels than the lighter breeds that are not subjected to the exciting causes. The disease usually affects white legs first and is more likely to occur in the hind ones.

CAUSES.—Cracked heels follow washing the legs or exposing them to wet and filth without giving them proper care after a drive or a hard day's work. Heat and cold, acting alternately, seem to have a strong tendency to chap the skin. Friction is another cause or the application of strong irritating drugs. It is an ailment that seldom affects horses that have proper care.

SYMPTOMS.—Usually the heels show a reddened appearance followed by swelling and small cracks and the skin exudes a fluid and the animal travels stiff.

TREATMENT.—If the animal suffers much pain apply hot water and hot packs or poultices of linseed meal, boiled turnips, or antiphlogistine which will allay the irritation. Dissolve one-quarter pound of sugar of lead, two ounces of sulphate of zinc and one ounce of powdered sulphate of copper in a gallon of water and apply to sore heels three times a day. Or, apply one part carbolic acid and thirty parts water and if the sores appear to be malignant and tardy in healing apply one part carbolic acid and fifteen parts water. In cases where the heels are dry and chapped some apply one part boric acid, one part powdered alum and five parts lanolin twice a day. The animal should be fed cooling laxative diet and if you believe his blood is bad give one dram iodide potassium at a dose two or three times a day. If the hair sheds, leaving the heel bald, apply one part boric acid and six parts vaseline daily.

PEOPLE'S HOME REMEDIES FOR SCRATCHES.—

1. **Carrot Poultices.**—Wash the parts thoroughly with warm soft water and castile soap, rinse with clear water, dry with a cloth and then apply a poultice of scraped carrots. Repeat this twice a day.

2. **Turnip and Charcoal Poultices.**—Clean the parts with castile soap and water and then apply a poultice of boiled turnips which have been mashed and thickened with powdered charcoal.

3. **Glycerine and Sulphur.**—At night apply a paste made of sulphur and glycerine, using just enough glycerine to give it a glossy appearance. In the morning apply glycerine alone. So continue until cured.

4. **Blue Vitriol, Alum, Vinegar, Etc.**—To a quart of cider vinegar add an ounce each of copperas, nut gall, blue vitriol and alum. Warm this until dissolved and apply lightly to the affected parts once a day. Keep the bowels open with epsom salts.

5. **White Lead and Linseed Oil.**—Soften some white lead with linseed oil and, after washing and rubbing dry the affected parts, apply the lead and oil and repeat each night until cured.

6. **Ointment for Scratches.**—To an ounce each of vaseline and sugar of lead add 30 drops of carbolic acid and make into an ointment. Always cleanse the parts thoroughly with warm water and castile soap and then dry before applying the ointment.

GREASE HEEL.—This is a disease showing itself generally on the hind heels of the horse and producing an irritation of the parts which soon involves the hair-follicles and sebaceous glands which soon give off a discharge. Heavy breeds of horses are much more likely to be affected than the lighter breeds. Some veterinarians are inclined to believe this ailment contagious and to be caused by the presence of a parasite; however, this has not yet been proven to my satisfaction, but it is well to keep in mind that it may be communicated from one to another.

CAUSES.—The causes of grease heel are both exciting and predisposing. The exciting causes are washing the legs too often and not drying them properly, especially if the skin is white. The most common cause is cracked heels or scratches which it often follows and the same causes that produce the one will cause the other. Horses with round fleshy legs that are inclined to stock and those that are kept in filthy stables or allowed to run in snow or slush or walk through putrid pools in the straw yard or used in mud and wet and that are not taken care of after their day's work are very likely to have grease heel. The skin in the region of the heel is very vascular and abundantly provided with oil glands; therefore, when exposed to irritants these parts are likely to become inflamed. No doubt, either overfeeding on rich nutritious food or feeding food of a poor quality has a tendency to produce grease heel.

SYMPTOMS.—There is always more or less swelling of the parts, a slight discharge of oily fluid, and cracks and chaps of the skin with some eruption and generally lameness.

TREATMENT.—The treatment of grease heel should consist in removing the cause if possible and in taking steps to arrest the discharge and bring about a healthy condition of the diseased parts. It is always a mistake to apply too powerful astringents, but in their place use hot fomentations and poultices after the hair has been clipped off. Discontinue feeding grain, give a full dose of cathartic medicine and, after the animal is purged, feed cooling laxative food, such as well salted bran mash, vegetables and grass. Dissolve $\frac{1}{4}$ pound of sugar of lead, three ounces sulphate of zinc and one ounce of carbolic acid in a gallon of clean water and apply to the swollen and inflamed legs three or four times a day. Or, dissolve ten grains of chloride of zinc in a pint of water and apply three or four times daily. Or, dust on powdered charcoal or use bromo-chloral and after the sores heal and scabs form on them apply some glycerine. Whenever the disease assumes a malignant type and ugly looking sores appear, touch them with crude carbolic acid or dust them over with burnt alum or with nitrate of silver or use a red hot iron. In using either caustics or the actual cautery it must be done with care or the healthy parts may be injured. I have often applied yeast poultices and also turnip or carrot poultices and obtained good results in the early treatment of this ailment. Give three-dram doses of powdered saltpeter at a dose in feed three times a day in the early stage of this ail-

ment; in the later stage give three or four-dram doses of Fowler's solution of arsenic two or three times a day for fifteen or twenty days.

PEOPLE'S HOME REMEDIES FOR GREASE HEEL.—

1. **Oxide of Zinc Ointment.**—For two days apply poultices of equal parts of flax seed meal, bran and finely powdered charcoal. Then, twice a day for ten days apply oxide of zinc ointment. The parts should be thoroughly washed and dried before each application. Give loosening food and for a week give 2 drams of nitrate of potash in the feed morning and evening.

2. **Turpentine, Linseed Oil and Oil of Vitriol.**—Put a quart of linseed oil and four ounces of turpentine into an earthen vessel and very slowly add one ounce of oil of vitriol. Be sure to add the vitriol slowly and at the same time stir the mixture and so continue until cool. Use this as a liniment for chronic scratches, grease heel and old sores.

3. **Ointment for Grease Heel.**—To half a pound each of honey, lard and tar melted together add one ounce of pulverized white vitriol, one ounce of pulverized sugar of lead and one-half pound of pulverized alum and stir until cold. Put on a cloth and bind on for 36 hours. Repeat this application whenever needed. At the same time give condition powders for the blood.

ECZEMA, ACUTE AND CHRONIC.—(See "Cattle Department.")

MANGE—SCAB—ITCH.—All these ailments are due to parasites that harbor in the skin or to mites which trouble both horses and cattle. Some of these parasites and insects bury deep in the cracks of the skin while others work on the surface and it is well to keep in mind that one animal gets them from another.

SYMPTOMS.—There is almost a constant itching of some parts of the surface of the body and when the hand or curry comb or brush is placed on the body the horse leans towards you as though he liked to be groomed. Scabs very often form and sores appear which are the result of the animal's rubbing himself. To be sure that an animal has mites use a magnifying glass in looking at the scales that come off the body.

TREATMENT.—Wash the body with soap suds, adding a tablespoonful of borax to every quart or the same quantity of kerosene; or, apply coal-tar disinfectant and water, a five per cent. solution or even stronger; or, a decoction of tobacco, one ounce to a quart. Occasionally dust on some powdered sulphur. If you are sure he has scab use the treatment prescribed for scab in sheep. Good grooming and generous feeding are helpful after the parasites or mites are killed.

PEOPLE'S HOME REMEDIES FOR MANGE.—

1. **Whale Oil, Oil of Tar and Sulphur.**—To 6 ounces of whale oil add 3 ounces of oil of tar and 2 ounces of lac-sulphur; mix thoroughly. Wash the skin thoroughly and apply the above with a hair brush. In two or three days repeat the washing and application.

ERYSIPELAS.—(See "Cattle Department.")

ITCHING TAIL.—This is an itchy condition of the skin at the root or scalp of the tail and is generally the result of filth or some parasitic disease or of an over-fed horse becoming feverish with a heated condition of the skin, causing the animal to rub against almost anything he can reach. One of the first steps is to give the horse a mild dose of cathartic medicine. Reduce his supply of stimulating food, wash the tail with soap and water every day and wet the scalp with a lotion composed of baking soda, one and a half ounces in a quart of water; or, use salt in place of the soda; or, put two

ounces of kerosene into a quart of soap suds and apply the one which is the most convenient, three times a day. If the horse has pin worms, they may cause him to rub and if so, wash the bowel out with soap suds, followed by an infusion of quassia (two ounces of chips soaked in three pints of hot water for two hours). By dissolving four ounces of sugar of lead and one ounce of carbolic acid in one-half gallon of water a useful application is made for an itching tail. Good grooming and cleanliness and keeping up the treatment I have prescribed will soon effect a cure.

SURFEIT—NETTLE RASH—URTICARIA.—This is an eruptive condition of the skin in which there are small or moderate sized hard nodules or lumps. Sometimes they come in the form of a small blister. This lumpy condition of the skin takes place as a sort of effort of nature to throw off either a surplus of effete material or a poison of some kind.

CAUSES.—Generally the cause is too high feeding of corn or other fat-producing grain. It sometimes appears at shedding time and during the changeable weather of spring and autumn. Poorly groomed horses suffer from surfeit.

SYMPTOMS.—The skin appears to swell and thicken and this is followed by the appearance of buds or bunches and the skin remains thick in several places. This eruption generally appears quickly and it may disappear rapidly, but generally lasts for six or seven days.

TREATMENT.—Give a cathartic of either aloes or epsom salts and keep the bowels moderately active by giving either salts or raw linseed oil. Also give a tablespoonful of saltpeter or two tablespoonfuls of baking soda at a dose in feed three times a day. Mixed hay, vegetables and grass are the best foods and the quantity given should be limited. If the horse itches, put one ounce sulphuric acid in a gallon of water and apply to itchy parts twice a day; or, dissolve an ounce of baking soda in a quart of water and apply this lotion two or three times a day. Salt and water is also a good remedy.

TUMORS.—(See "Cattle Department.")

SIT-FASTS—CALLOSITIES.—

CAUSES.—These bunches are very common under the collar. They are located under the skin and are caused by chafing or a bruise bringing on a thickened condition of the skin or a fibrous bunch under the skin. Badly fitting collars and saddles and improper care of the shoulders or back are the most common causes of sit-fasts.

TREATMENT.—In my practice I never waste time using poultices or caustics in the treatment of chronic sores and bunches of this kind but I always cut them out and treat the shoulder as any common wound should be treated. After the operation apply any good home healing remedy and rest the animal if possible, but if you are obliged to work him, hollow out his collar or saddle to prevent irritating the wound. Apply peroxide-hydrogen twice a day; ten minutes later apply any of the following healing remedies; a two per cent. solution of carbolic acid; one part coal-tar disinfectant and twenty parts water; or, dissolve one-quarter pound of sugar of lead, three ounces sulphate of zinc and three ounces of tannic acid in a gallon of water and apply to shoulders or back three times a day. There are many other useful remedies you may apply.

HIDE-BOUND.—This is not a disease though it is often thought to be. This is a mistaken idea for it is usually the result of some other ailment of a debilitating nature such as fevers or indigestion or the feeding of badly

cured or non-nutritious food; or, it is the result of over work, causing the animal to lose flesh and of course the hide then clings to the bones more closely than if they were covered with fat. The skin being tight on the body, the animal being thin, the skin dry and dirty and the coat usually rough gives the animal the appearance of being hide-bound, hence the name.

TREATMENT.—Increase the quantity of nutritious food, giving tonics and worm remedies; also groom the animal well twice a day and perhaps keep him in a warmer and more comfortable stable. He will then soon commence to thrive and lose the appearance of being hide-bound. Give two tablespoonfuls of ground gentian, one teaspoonful of powdered copperas, two tablespoonfuls of ground ginger, one tablespoonful of powdered cinchona and one tablespoonful of baking soda at a dose in feed two or three times a day.

FROSTBITES.—(See "Cattle Department.")

BURNS AND SCALDS.—(See "Cattle Department.")

LICE.—There are two kinds of lice that usually attack the horse—blood-suckers with narrow heads and long trunk-like sucking tubes and bird lice with very large broad heads and biting jaws.

SYMPTOMS.—The state of lousiness is usually seen in poor, half-starved young animals or very old ones. Debility seems to be the predisposing cause, rendering the animal a proper subject for the propagation and development of these parasites.

TREATMENT.—The best treatment is to clip the hair and then wash the animal with a decoction of stavesacre, one ounce of the powdered seeds to a pint of warm water; or, a solution of one part tobacco to twenty parts water; or, one part coal-tar disinfectant to twenty parts water. Or, apply kerosene emulsion which is made by mixing one quart of kerosene and one quart of rain water and adding one pound of good soap. When dissolved, pour from one bucket to another until thoroughly mixed, then add ten quarts more of water and bathe the horse with this mixture every day or two until a few applications have been made. The sides of the stall and the harness as well as the curry combs and brushes should be treated with an application of the same. I have also applied, with good results, one part carbolic acid and thirty or forty parts of water. A small quantity of mercurial ointment rubbed into the mane and root of tail has a good effect. Good grooming and plenty of good food is important for lice seem to select for their victims the weak, thin animals.

PEOPLE'S HOME REMEDIES FOR LICE.—

1. **Benzine.**—Sponge the parts with benzine and repeat in a week to kill any that may have hatched from the nits in the interval.

2. **Sulphur Ointment.**—Sulphur ointment will kill lice on horses.

3. **Tar Water.**—Sponge the horse with tar water and repeat in about a week to kill any that have hatched later from the nits.

4. **Insect Powder.**—Dust the horse well with insect powder and then blanket him for an hour or two. Examine again in a week and if any more have hatched the treatment should be repeated.

5. **Coal Oil, Soap Suds and Vinegar.**—Wash the horse with one part coal oil and five parts soap suds twice a week. To kill lice nits apply one part cider vinegar and two parts water.

WARTS.—Warts are abnormal growths of the skin and occur on any

part of the body; however, they are most frequently found about the head, neck, belly and sheath.

CAUSES.—Medical authorities are somewhat divided in opinion as to the real cause of warts; however, a slight injury or irritation of the skin may start a warty growth. Highly fed animals appear to suffer most from warts, the skin becoming affected from blood trouble or stomach disorders. We sometimes meet with certain kinds of warts that seem to be contagious,

TREATMENT.—If overfeeding has produced them it is well to cut down the animal's allowance or change from stimulating food to a more cooling and laxative diet. I have known a run to grass to seemingly cause them to go away. Every wart that has a well defined neck should be cut off with either a knife or an ecraseur; or, they should be burned off with a knife-shaped iron at white heat. By burning them it stops bleeding and often kills the roots. They can also be removed by ligaturing; however, I do not like this method. Now, there are many different remedies that will take them off, such as castor oil, acetic acid, chromic acid, arsenic ointment, nitrate of silver and salicylic acid. It is well to keep in mind that they are usually not deep rooted, principally confined to the skin, and are easily cut out but sometimes are inclined to bleed. Applying tincture of chloride of iron or burning with a hot iron will quickly stop the bleeding; or, tie the blood vessel with a silk thread.

PEOPLE'S HOME REMEDIES FOR REMOVING WARTS.—

1. **Dry or Seed Warts.**—Take equal parts of calomel, copperas and alum. The first two should be pulverized together and the alum should be burned and then mixed with the other ingredients. The wart should be scraped with a knife until raw and the mixture applied as often as the scab comes off until the wart is entirely removed.

2. **Bluestone.**—Clip or cut off the wart and cauterize the raw surface with powdered bluestone.

3. **Acetic Acid.**—Apply strong acetic acid to the warts until they are removed. Do not let this run upon the surrounding skin.

4. **Washing Soda.**—Dissolve an ounce of washing soda in two ounces of water and wet the warts with this solution.

5. **Castor Oil.**—Apply castor oil to the warts twice a day, or apply salicylic acid.

6. **Sulphur.**—Give a teaspoonful of sulphur at a dose in feed once a day. This will generally take off warts.

DISEASES AND INJURIES OF THE EYE AND EAR.

(Including Sore Eyes, Worm in the Eye, Cataract, Moon Blindness, Etc.)

SIMPLE OPHTHALMIA—SORE EYES—INFLAMMATION OF THE EYES.—Simple ophthalmia is really an inflammation of the eye, or of the eyeball and is sometimes confined to the conjunctiva (mucous membrane of the eye).

CAUSES.—It is very often the result of an injury, a speck of sand getting into the eye and setting up inflammation, stable gases and sudden changes of weather. However, it generally results from injury or from a foreign body getting into the eye and remaining there.

SYMPTOMS.—The symptoms are—flowing tears, swollen lids, red and retracted eyes, dilated pupils and blinking when facing a bright light. I might say that in this ailment the eye is much more inflamed than in periodic ophthalmia.

TREATMENT.—First of all a very careful examination should be made and if possible the cause should be removed. We find the disease existing in three forms, depending on how long the eye has been sore. First, we have an acute inflammation and if this is not subdued a sub-acute inflammation follows and if this lasts long it becomes chronic. Now the first step in the line of treatment should be to reduce the inflammation and this is generally best done by applying either hot or cold water and these applications should be kept up constantly for at least one or two hours at a time and it is well to keep in mind that hot water in winter and cold in summer is the way to use water on inflamed parts. Drop three grains of sulphate of zinc and one grain of sulphate of atropia into one ounce of rain water and apply three times a day. Also, feed no grain but give bran mashes, vegetables or grass. A dark stable is the best and any eye wash that is good for man is equally good for animals for their eyes are alike. I very often give one-dram doses of iodide of potassium internally with good results and this always helps to clear the eyeball. I also blow some calomel into the eye daily and give a few grains in the feed with good results, if the case seems to stand still and not show any signs of mending. Always remember that dust and bright light irritate the eyes.

PEOPLE'S HOME REMEDIES FOR INFLAMMATION OF THE EYES.—

1. **Witch Hazel.**—Bathe the eyes freely with extract of witch hazel.
2. **Lotion for Eyes.**—To 4 ounces of water add 1 ounce of glycerine, and one-half dram of sulphate of zinc. Put 4 or 5 drops into the inflamed eyes morning and evening.
3. **Sugar of Lead and Belladonna.**—To a pint of boiled rain water add 30 grains of sugar of lead and a teaspoonful of fluid extract of belladonna. Keep a soft cloth wet with this and hang over the eyes. This is for inflamed eyelids.
4. **Borax.**—Use 60 grains of borax to a quart of boiled water, keep a cloth wet with this and hang over the eyes. It is also important that you keep the bowels in a laxative condition.

INFLAMED EYES—CONTAGIOUS OPHTHALMIA.—(See "Cattle Department.")

CATARACT.—A cataract is either a partial or complete opacity of the crystalline lens or its capsule and may be either the result of injury or a sequel to other diseases, such as periodic ophthalmia. Cataracts vary in shape, size and situation. Only the capsule may be involved, or both capsule and lens, and sometimes only the lens. It is seen at birth in some animals and is called congenital cataract. When the whole lens is affected the eyeball shows some atrophy or wasting and the opening of the pupil becomes large and loses its elliptical form. In order to detect a small cataract place the animal in a dark place and use artificial light such as a candle. Or, if you know how to use an ophthalmoscope you will very readily detect a cataract if there be any. The test is always made most easily after belladonna or atropia has been applied to the eye. However, it is not generally necessary to test this way. By facing the horse out of a barn door and placing your hat over his eye, letting it remain there for a few minutes and then removing it quickly, the different effects light will have on the well and diseased eye will be marked, especially on the pupillary openings. Cataract usually develops slowly but I have known it to develop in twenty days and I might say there is no remedy on account of surgical work being inadvisable in all cases of cataracts in animals. Of course an operation is advisable in man because he can wear glasses.

CONJUNCTIVITIS—CATARRH OF THE EYE.—(See "Cattle Department.")

IRITIS—RETINITIS.—This is an inflammation of the eye, especially that portion which surrounds the pupil and gives color to the eye. It is usually brought on by blows or extreme changes of light and darkness. It is also the result of facing fierce storms and cold wind and is no doubt sometimes the result of constitutional disturbances, especially those of the digestive organs.

SYMPTOMS.—The symptoms are like those of superficial ophthalmia but there is more constitutional disturbance with loss of appetite, increased heat of body and considerable retraction of the eye into its socket. The haw is drawn up, the mucous membrane is inflamed, the aqueous humor becomes muddy with white floating flakes in the anterior chamber and frequently a little pus settles in the lower part. As the disease advances a white speck or cloud appears in the lens behind the pupil and iris.

TREATMENT.—Place the animal in a dark stable with pure, dry air. Give a full dose of cathartic medicine and some saltpeter in his drinking water, also place some wet cloths over his eyes. Apply a saturated solution of boric acid to the eyes five times a day. This is made by dissolving all the boric acid the water will take up; therefore, there is no danger of making this solution too strong. If the eyes are painful add some belladonna. Feed the horse a cooling, laxative diet and give one-half dram iodide of potassium and two drams Fowler's solution at a dose two or three times a day. If the eye fails to clear, blow a little calomel into it once or twice a day and give twenty-five grains of calomel at a dose twice a week for three weeks.

INFLAMMATION OF THE HAW (Membrana Nictitans).—(See "Cattle Department.")

WORM IN THE EYE.—Worm in the eye is not a common ailment in this country; however, I have met with more than a dozen cases. It is, however, a common affection in some hot countries such as India.

CAUSES.—Through the horse drinking stagnant water is the manner in which the ova or egg makes its way into the circulation and through the blood vessels into the eye.

SYMPTOMS.—The eye is dull. On examination a **thread-like** body is seen moving about in the eye and if allowed to grow **it will** produce loss of sight.

TREATMENT.—A surgical operation is always **successful**. Puncture through the cornea and allow the aqueous humor and worm to escape.

PERIODIC OPHTHALMIA—MOON BLINDNESS.—Periodic ophthalmia is a constitutional affection of the eye and is known by many different names such as “moon-blindness,” “moon-eyes” and “constitutional ophthalmia,” and it has also been called “odontalgia” and we sometimes hear it called “hereditary ophthalmia” and “specific ophthalmia.” Fortunately, this ailment is not nearly so common as it was twenty years ago.

CAUSES.—Perhaps it might be as well for me to say that the veterinary profession is pretty well agreed that the cause is not known; however, certain exciting causes may have a tendency to bring it on, but it seems to lurk in the body ready to break out when favorable conditions exist. Many writers believe the cause to be a germ of some kind. Dark, badly ventilated stables, poor food, extreme heat or cold, all have a tendency to bring it on. Over exertion and over heating have been known to cause it. There are many exciting causes of periodic ophthalmia.

SYMPTOMS.—The attack is generally sudden, the eye is sensitive to bright light and always retracted, the eyelid is dropped, the cornea dim and the eye dull, and as soon as one eye becomes affected the other generally gets sore. One attack seems to follow another. After each attack the eyeball atrophies more or less and generally this disease sooner or later terminates in loss of sight.

TREATMENT.—The very best that can be done in the line of treatment for this ailment is to relieve the disease and this is perhaps best done by keeping the bowels open and rather active by giving salts, oil or aloes to purge the animal if you believe it necessary. Place the horse in a dark stall and give a tablespoonful of nitrate of potash at a dose in the feed or water twice a day until the eyes become less inflamed. Put three grains of sulphate of atropia in one ounce of rain water and apply twice a day; or, apply 3 grains acetate of lead, twenty drops tincture of opium and one ounce of water twice daily.

CANCER IN THE EYE—FUNGUS HÆMATODES.—(See “Cattle Department.”)

AMAUROSIS—GLASS EYE—GUTTA SERENA.—(See “Cattle Department.”)

FOREIGN BODIES IN THE EYE.—(See “Cattle Department.”)

DISLOCATION OF THE EYEBALL.—(See “Cattle Department.”)

INJURIES TO THE EYELIDS.—(See “Cattle Department.”)

INFLAMMATION OF THE INTERNAL EAR—OTITIS.—(See “Cattle Department.”)

DISEASES OF THE CARTILAGE OF THE EAR.—(See “Cattle Department.”)

ABSCESS OF THE EAR.—(See “Cattle Department.”)

FOREIGN BODIES IN THE EAR.—(See “Cattle Department.”)

LACERATED EARS.—(See “Cattle Department.”)

DISEASES OF THE NERVOUS SYSTEM.

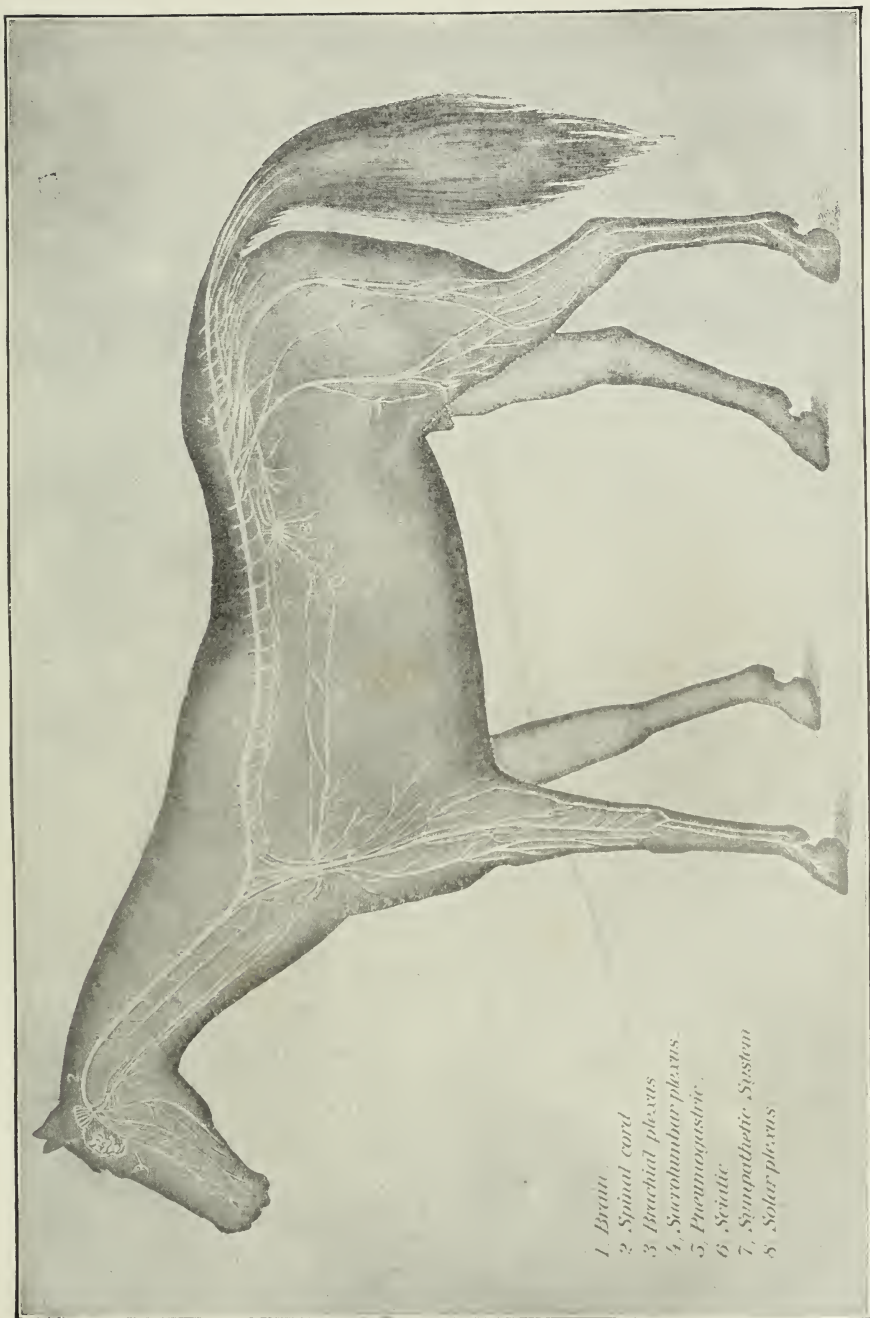
(Including Lockjaw, Hydrophobia, Blind Staggers, Stringhalt, Sunstroke, Paralysis, Etc.)

TETANUS—LOCKJAW.—Tetanus is not a common disease in cold climates; however, it is quite prevalent in hot countries where the soil is fertile and wounds are not treated properly.

CAUSES.—The tetanus bacillus makes its way into the body through a skin or flesh abrasion or wound. The most common abodes for this germ are in road dust, garden earth, barnyards, stable floors or in any fertile soil. Therefore, one can readily understand why a wound situated in the foot, leg or lower part of the body is very convenient for the bacillus to gain entrance into the body and cause lockjaw.

SYMPTOMS.—In mild cases it is not always easy to make a correct diagnosis. However, in severe cases it is easy, for the clinical symptoms differ from all others. It is safe to say that nearly all the muscles of the body are implicated, some of them much more so than others. The muscles of the legs are always stiff, the muscles of the head and neck are the first to be noticed, and the nose is always poked out. The head and tail are usually elevated, the animal is easily excited and trembles some and the membrana nictitans (haw) flashes over the eye whenever the animal is excited. The animal stands with the forelegs extended forward and the hind ones back of the body and generally straddles as though afraid of falling. All animals suffering from lockjaw present an anxious expression, move stiffly, have a quick pulse when excited and the jaws are generally either partially or totally closed. The animal almost always takes the standing position and retains it, his appetite is good, bowels costive, urine scanty and highly colored. Whenever the animal lies down before the muscles are relaxed nearly all the symptoms become aggravated and it is not unusual for them to grow more nervous and struggle until they die, but in mild cases they often retain the standing position for several weeks until they have made a recovery.

TREATMENT.—It is safe to say that nearly every drug and anti-toxic serum known to veterinarians and physicians have been tried and failed as a remedy for severe cases of tetanus. However, the disease can generally be prevented by immunizing the patient with anti-toxic serum (tetanin) which will immunize the animal. Furthermore, wounds in the lower part of the body should be covered with absorbent cotton or oakum or a dressing that will make it impossible for the admission or entrance of the tetanus bacillus to the circulation or body of the wounded animal. Nearly all veterinarians are equipped to immunize animals which have nail punctures and wounds in the lower part of the body; besides, the treatment is not expensive and it is certainly cheap insurance. Of course this treatment is not curative after the disease has once become established. A horse suffering with tetanus should be kept in a dark stable which is free from noise. He should be fed gruel and liberally supplied with water. The water and feed should be put into a tub and set about three and one-half feet high for the horse is unable to lower the head much. Give the horse one dram of



NERVOUS SYSTEM OF THE HORSE.

solid extract of belladonna at a dose three or four times a day, either by mouth or by injection into the bowel. In the early stages it is good practice to give a cathartic. If the wound can be discovered apply antiseptics such as hydrogen-peroxide, carbolic acid, iodoform, boric acid, bichloride of mercury, etc. There are many drugs that appear to have a soothing effect, such as bromide of potassium and chloral hydrate. When the spasms are intense they can be relieved by inhalations of chloroform. However, this relief is usually only temporary. As a rule the same man should look after the horse during his entire sickness as strangers usually excite him. It is important to feed nutritious food and green fodder is the best. Whenever a recovery takes place it is always slow and it is unwise to put a horse to work too soon after he has had tetanus.

PEOPLE'S HOME REMEDIES FOR LOCKJAW.—

1. **Preventive.**—Wet wounds lightly with turpentine and they will not be the cause of lockjaw.

2. **Nux Vomica and Belladonna.**—Give one-half teaspoonful of tincture of nux vomica and a teaspoonful of fluid extract of belladonna at a dose three times a day. This is said to cure lockjaw.

RABIES—HYDROPHOBIA.—Rabies is not a very common disease in the horse. It is usually the result of a bite of a mad dog and the disease never has a spontaneous origin, but it is often very difficult to trace the source of infection. All, or nearly all, of the lower animals, if bitten, are liable to this disease. It is called hydrophobia by many people on account of the animal's inability to drink water. The virus or poison no doubt exists in every part of the body, especially in the saliva, spinal cord and brain but after death it soon ceases to be dangerous. It is perhaps true that the first bites from a rabid dog are possibly the most dangerous and it is also true that man is not so easily infected as are other animals. I knew a woman to die of hydrophobia from allowing a mad dog to lick her hand, all going to show that the saliva is loaded with the virus. I also knew a man who caught the disease while skinning a dog.

SYMPTOMS.—There is a change in the disposition, dullness and an inclination to hide away in a dark quiet place. The patient startles easily, is a little flighty and grows dull but remains quiet only a short time. Those affected are inclined to eat pieces of wood and bits of coal and dirt. Later they become irritable, often inclined to snap and bite but they generally will not go far out of their path to bite a person, but will chase dogs wherever they see them. The head and tail are always carried low. The disease assumes one of two forms; the furious or the dumb and paralytic. In the latter form the lower jaw of the dog drops, remaining so unless spasms come on or allowed to worry another dog. The furious form is more dangerous for the dog will often bite you without a moment's warning. A mad dog, if allowed to run loose, will often travel ten or fifteen miles, return to his old kennel, lie down and die from exhaustion. The mad dog always loses his voice, soon has trouble swallowing food or water and dies of paralysis.

TREATMENT.—No remedy—but the Pasteur treatment will prevent this disease in man.

VERTIGO—BLIND STAGGERS—FALLING FITS—MEGRIMS—CONGESTION OF THE BRAIN.—This is a horse disease characterized usually by sudden and temporary loss of sensation and voluntary motion,

generally with considerable trembling without the general spasms of epilepsy.

CAUSES.—This is very often the result of an undue accumulation of blood in the brain, producing congestion, and it may be due to heart trouble, extreme heat, excitement, the giving of large doses of stimulants, over-exertion, badly fitting collars which obstruct the return of blood from the head to the body or it may be caused by tumors in the brain or a tumor or abscess interfering with the circulation back from the brain. It is also brought on by digestive disturbance and is quite common in overly fleshy horses.

SYMPTOMS.—The animal usually slows his gait, throws up his head, shivers, staggers, and he may fall and sometimes he will plunge and run away. The eyes are staring, respiration usually quickened and he may stand with legs braced and in a few minutes be apparently all right and go on his journey as though nothing had happened. In other cases he may show the effects of this attack for a week but if the ailment is due to organic heart trouble or disease of the blood vessels of the brain he may show a dumpish condition without any fitty condition and die without showing any alarming symptoms.

TREATMENT.—Remove the cause if possible, apply cold water to head, reduce his food supply, give a cathartic of either aloes or oil and if he is fleshy, reduce his weight. If it comes on because of want of exercise do not allow him to remain idle. It is always good judgment to stop the animal when the attack is coming on. In acute cases they very often recover but in chronic cases they seldom get over it and remain well without showing dizziness, fits or staggers. Blood letting gives relief. Giving chloral hydrate or bromide of potash and a laxative diet help every case.

SUNSTROKE—HEAT EXHAUSTION.—Horses that fall from heat exhaustion or that suffer from what is commonly called "sunstroke" are usually out of condition otherwise or they probably would not have been affected much by the heat. Horses suffering from indigestion or those who have a heavy coat of hair or who have sluggish kidneys and very little action in the glands of the skin, and those that are fleshy are usually the victims. Horses that are fed light and exercised regularly and whose bowels and kidneys are acting freely and which perspire moderately are usually exempt from these attacks.

SYMPTOMS.—In sunstroke the horse usually falls and appears exhausted. In heat exhaustion perspiration checks, the horse pants and staggers, the skin is dry and the mucous membranes of eyes and nostrils are red and his temperature goes up.

TREATMENT.—Place the animal in a cool, comfortable, shaded place and apply cold water freely to both the head and body. Give one-half pint of whiskey and one ounce of aromatic spirits of ammonia, and sometimes add a tablespoonful or two of sweet spirits of nitre, and then add a pint or more of cold water and give as a drench and repeat in an hour or two if necessary. In treating an ailment of this kind it is important to place the horse in a cool, comfortable stable or under a tree or tent and cool the surface of the body, at the same time giving stimulants.

STRINGHALT.—Stringhalt is a spasmodic jerking and a sort of regular movement of one or both hind legs and is perhaps caused by some lesion or abnormal condition of a nerve or perhaps of the spinal cord. It is, no doubt, caused by some irregular supply of nerve influence to the extensor and

flexor muscles or tendons of the limb. However, it is difficult to explain just why this irregular distribution of nerve supply comes about. In some cases where we know there is nerve pressure it can be accounted for, but in a majority of cases it must be admitted that the cause is not known and the disease not well understood.

SYMPTOMS.—Whenever the animal is moved forward or suddenly backed it will show an irregular jerking motion of the limb. This is always noticeable in bad cases, but in some mild cases the animal may move quite a distance before showing it and I have known cases where the animal had to be turned from side to side or backed up quickly before they showed it. Of course an animal is more likely to show it when trotted. Stringhalt may follow exposure to severe cold weather and sometimes follows blistering or firing for ring-bone. It is well to keep in mind that heat palliates or relieves every case of stringhalt. Some horses show it in the winter but not in the summer.

TREATMENT.—In the majority of cases the disease should be considered incurable. Removing a section of the tendon under the hock (peroneal tanotomy), however, or removing a section of the nerve high up, have given me fairly good results and these two operations are well worth the trial. In an extremely bad case where the animal jerks the feet up to the belly, does not improve with exercise and does not show it less in warm weather, it is hardly worth while to operate. Peroneal tanotomy is a very simple operation and can be performed without throwing the horse.

PARALYSIS.—Paralysis is loss of voluntary motion with or without sensation and is either partial or complete, usually affecting one part, the whole side or hind quarters. It may be local and affect only a muscle or two as we sometimes find in the lip. Paralysis sometimes follows gastric irritation bringing on fits and loss of power of the hind quarters. Or, if the trouble be in cord near the head, the paralysis may affect the whole body. We have paralysis resulting from brain disease; also, tumors in the brain sometimes cause loss of power, followed by death. Paralysis sometimes results from sunstroke or concussion from blows or from falling and jumping with weight on the back; or, it sometimes occurs when throwing a horse down. In these latter cases the vertebræ or bones of the back have either been fractured or displaced, causing spinal cord pressure and loss of power. A paralysis may also come from violent muscular contraction while resisting when he is secured for some surgical operation. Tuberculosis affecting the spinal cord, tumors in that region pressing on the cord and a softening of the cord, all lead to paralysis. Following osteoporosis (big-head) where the bones enlarge and honey comb or the bones of the back ankylose, the back is easily broken and of course when this occurs paralysis always follows. We have still another form of partial loss of power where the animal goes with a sort of staggering gait and weaves from side to side. This kind may be the result of slight accident or some error in habits or food supply. There is also a paralysis of the lips caused from some injury to the brain or some interference in the nerve supply to the lip. Horses also have a paralysis of the tail which is generally the result of an injury followed by wasting of the muscles of the tail. These are unsatisfactory cases to treat.

TREATMENT.—Treatment of paralysis is by no means always satisfactory. However, there are certain rules which must be followed in order to assist nature in bringing about a recovery. If there be any displacement of a

bone, put it back in place as quickly as possible and try to keep it there. The bowels and kidneys should be kept active and the general health of the animal looked after. The food supply should be nutritious and easily digested. The weak parts should be stimulated with some good home liniment such as equal parts turpentine, aqua ammonia and sweet oil. Apply this to the affected parts daily; also, give nux vomica or strychnia, which latter has the same effect but is more active. In some cases the different preparations of iodine have a good effect and produce good results. Many horses should be placed in slings and kept there until they recover from paralysis. This should be done on account of their weakness and inability to get up and down. They wear out their strength struggling to get up. Besides, the bowels and kidneys act better when the animal is kept in an upright position. The horse thrives better in this position and of course must recover more rapidly if thriving than if failing in health. It is also very important in the treatment of paralysis to feed a good quality of food. Feed some vegetables but no musty or badly cured fodder. It may be necessary for you to blister and if so apply cerate of cantharides, or biniodide of mercury, one part to six or eight parts of lard, once every week or ten days.

APOPLEXY.—Apoplexy is generally the result of stagnation of the circulation of blood in the brain, and there may also be a rupture of some small blood vessel or blood vessels, allowing the blood to clot and produce undue pressure on the brain.

CAUSES.—It is very often the result of some error in feeding, seldom attacking thin horses. It is not a common ailment of the horse. The dog and pig are often affected. It is, perhaps, brought on by overfeeding which produces too much blood and weakens the walls of the blood vessels. Fat animals seem to be the ones most likely to become affected.

SYMPTOMS.—Apoplexy comes on suddenly and as a rule the animal is unconscious. The pupil of the eye is dilated and breathing is labored. In some cases only part of the body seems to be affected. Post-mortem generally reveals some congestion of the brain, a ruptured blood vessel or extravasation of blood that has oozed through the wall of a vein or artery.

TREATMENT.—If a fleshy horse is affected he should be bled, taking away eight or ten quarts. Apply cold packs to the head, give bromide of potash in half-ounce doses every three or four hours or hypo-sulphite of soda, 1-ounce doses three times a day in food or water. Also reduce his food supply and get his bowels to acting freely by giving the common cathartic for the animal affected.

MYELITIS.—Myelitis is really an inflammation of the spinal cord and when the coverings of the spinal cord are inflamed the disease should be called spinal meningitis.

CAUSES.—It is quite often the result of injuries or feeding a poor quality of food. It is also the result of severe exertion or undue nervous excitement. Besides, it sometimes occurs in a locality, affecting several animals, without the cause being known and in some cases it follows an attack of azoturia. Whenever there is much softening of the spinal cord it usually terminates in complete paralysis and death.

SYMPTOMS.—There is great nervousness. Sometimes the animal perspires and occasionally falls and is unable to get up without assistance; but, when down, usually struggles. This is a disease that occurs more often during cold weather than during the summer months.

TREATMENT.—If it is caused by an injury and there be a complete loss of motion we have a right to suspect that the back is fractured. In such cases the animal should be destroyed. Give small doses of iodide of potassium and apply hot water packs to the back. Or, rub on some liniment. Fairly good results will often follow giving tincture of nux vomica in one-dram doses three or four times a day, but if there is complete paralysis you should destroy the animal.

EPILEPSY—FITS.—This is not a common ailment of horses but is quite common in the dog, and is spoken of as fits or convulsions.

CAUSES.—It is very often the result of intestinal or liver derangement, such as a torpid liver or stomach or bowel worms and it sometimes comes on when the animal is teething.

SYMPTOMS.—The animal generally falls, froths at the mouth and has a sort of convulsive fit, but usually gets over it in two or three minutes.

TREATMENT.—A liberal supply of fresh air always revives an animal suffering from epilepsy unless the brain hemorrhage is extensive. Also, give bromide of potash, cathartics and vermifuges and apply cold packs to the head.

CHOREA.—Chorea is a disease of the nervous system producing a sort of involuntary and convulsive jerking of the muscles and in horses it usually affects the flexor and extensor muscles of the hind legs. However, other parts of the body are sometimes affected. I have known horses to be affected in the foreleg and sometimes quite a portion of the body is affected. This ailment is not by any means too well understood and no sure remedy has ever yet been discovered. It very often comes on as a result of other diseases.

TREATMENT.—The general health of the animal should be looked after, the body kept warm and both the bowels and kidneys kept moderately active. If taken with it lightly in the spring of the year, quite a number of animals recover when turned out where they are exposed to the bright sunlight. I have obtained the best results by giving small doses of Fowler's solution of arsenic and iodide of potassium. Give from one to three drams of Fowler's solution and one-half dram of iodide of potassium at a dose in either feed or water twice daily. It is very important that the animal should be given good care and exercised moderately every day.

CEREBRO-SPINAL MENINGITIS.—Cerebro-spinal meningitis is a fever affecting the brain and spinal cord and their coverings. The ailment seems to be most prevalent on this continent and we seldom find one case alone. The nervous system appears to be most affected. This disease is no doubt on the increase. It sometimes arises sporadically but most commonly occurs as an epidemic in a stable or community.

CAUSES.—The causes of this ailment are none too well understood. Many veterinarians believe it to be due to atmospheric influences. Bad ventilation, damp stables, feeding musty fodder and bacteria may cause it. My own observations are that it is generally brought on by watering animals out of wells that catch the barn yard sap and where the water is well filled with decayed animal or vegetable matter. This is also the conclusion of a few other veterinarians. I might add it is also caused by the feeding of decayed vegetables.

SYMPTOMS.—There is generally more or less loss of power which may develop quite suddenly or gradually. The temperature always increases, then

some time later falls below normal and during the later period may rise again. There is generally some twitching of the muscles, sometimes about the neck, at other times the hind quarters. In severe cases it is not unusual to find the animal staggering and sometimes it tumbles down, lying on the side and moving the limbs rapidly as though trotting. In other cases they are more paralytic. In most cases the bowels are constipated and small quantities of urine are secreted and it is generally of a reddish color. The eye is also quite reddened. In other cases the brain appears to be very much affected, the animal being drowsy, dull and stupid. Later the animal becomes delirious, has convulsions and soon dies. In most cases the animal seems unable to swallow food, especially when the disease seems to be appearing without any well known cause and in different parts of the country. Whenever the animal seems to lose his power of swallowing food it means almost sure death. As a rule death results in from two to four or five days, and on examination after death we usually find considerable effusion about the brain and spinal cord with considerable congestion of the brain and cord. Also, the bowels will be found almost empty; however, I have often made examination after death and found very few, if any, post mortem lesions. But the symptoms of this disease differ from all others. Therefore, you can generally make a correct diagnosis.

TREATMENT.—Where the loss of power is almost complete you should look for a fatal termination, but if it is only partial, give one-half ounce of bromide of potassium or the same quantity of belladonna every three hours or one ounce three times a day; or, 2 drams fluid extract every 4 hours. Apply stimulating home liniments to the spine and legs. When giving medicine it is very often necessary to pour it through a tube for the animal is unable to swallow. It will also be necessary to give nourishment, such as eggs, milk, alcoholic stimulants and gruel in the same way and it must not be forgotten that a complete change of food and water should be made right away. All things considered, this is a very unsatisfactory ailment to treat for the disease generally proves fatal.



FOOT LAMENESS.



GREASE HEEL.



SHOULDER LAMENESS.



BRUISED KNEE.



ACUTE FARCY OR GLANDERS.



WATER FARCY OR
LYMPHANGITIS.



OPEN JOINT.

This is commonly called "Weed in the Leg" and if neglected will terminate in the chronic form called "Elephantiasis."

Caused by a kick or injury. Horse also has a bog spavin.

LAMENESS.

(Including Sweeny, Sprains and Strains, Fractures, Spavins, Curbs, Splints, Thorough-Pin, Etc., and Full Directions for Locating Lameness.)

HOW TO LOCATE LAMENESS.—Nothing seems to puzzle the horse owner and farmer more than locating lameness. This, perhaps, is for want of sufficient knowledge of the symptoms of lameness; also for lack of familiarity with the normal gait and peculiarity of action. Now, in order that every reader of this book may school himself in the art of locating lameness, I shall try to make the symptoms clear and as easily understood as possible. Lameness is a manifestation of pain by one or more limbs, indicating weakness or inability, soreness or stiffness, causing partial or total inability to use the limb or limbs. In order to detect lameness when it is slight you must be familiar, not only with the natural gaits but all the peculiarities of gait. The signs of lameness during repose (rest) are very important and frequently assist materially in locating the seat of trouble. If resting on all four limbs, the pastern of the lame one will generally be more upright than the others; if one foreleg be far in advance of the other it indicates tenderness or soreness in the back part of the leg and low down. Resting the toe on the ground and bending the knee and fetlock, without the foot's being in advance of the other, indicates shoulder or elbow lameness. When both forefeet are kept in advance of the body, the animal resting on the heels, with the hind legs kept well under the body, the soreness is usually in the forefeet. When a horse rests one foot more and for a longer time than any of the others it should create suspicion. When he is inclined to lie down and remain so, it indicates weakness, perhaps fracture or considerable pain. In most cases of hind quarter lameness, if it is situated low down, the foot is kept in advance, but if in the stifle, he drags the toe and if the hip is the seat of trouble he will also drag the leg and trot out of alignment. A horse that walks lame always **trots very lame**. Lameness may be shown in the walk but it is best seen in the slow easy trot and, if led, the head should not be pulled to one side, and the less excitement the better. In all cases of lameness where only one leg is involved the leg is lifted quickly and less weight is put upon that foot; therefore, a halting of the limb occurs and by listening a different noise is made when the foot strikes the ground. When one fore limb is affected the head and fore quarter are raised when that foot comes to the ground, but he is seen to drop on the well side. Do not be misled and suppose that he is lame behind, for, to the casual observer, it would seem so on account of a depression in the opposite hind hip. In lameness in one hind leg the hip is raised higher than the opposite one and dropped carefully; in other cases a depression is found in the hip. With lameness in both forefeet he steps short and puts the foot down carefully; he changes position often, not standing on one foot very long at a time; the shoulders are carried stiff and upright; the head is carried high; the loins are arched and the hind feet are brought well under the body. Lameness in both hind quarters is generally marked by the backward position of the forefeet, being well under the horse in order to take some weight off the hind quarters; besides, he

backs with difficulty. When the horse is lame in both legs on same side he usually ambles and never trots square, but drops heavy on the well side. Remember, if a horse which is lame in the right fore limb be trotted from you he seems to be lame in the left hind leg for the quarter ascends and descends. A horse trotted in a small circle always appears to be lame in the leg nearest the center of the ring. Many horses travel with a nod in front or have a hitch behind, but are perfectly sound. Other horses come out of the stable sore and lame but after taking a few steps go sound. Some lameness grows more severe the farther he goes. The slow gait is the best gait to locate lameness. Be sure to have the horse trotted towards you, watch closely for the symptoms I have mentioned and do not decide too quickly. Have him trotted immediately after he leaves the stable. Examine the foot closely; I have known horses to be lame in two places in the same leg at the same time. In locating lameness it is well to use both negative and positive signs. If there is heat, pain, or swelling in any part of the limb, discoverable by manipulation, the evidence is positive that the cause is in such parts. If there is no heat, swelling, or pain, then we must conclude the lameness is deep seated and then arrive at a conclusion from negative evidence. It is a very common custom to make a hurried examination, jump at a conclusion and apply some liniment or blister without being certain where the lameness is located. It is far better to apply some soothing remedy such as hot or cold water or wait a few days until the symptoms are more marked. In my practice in Cleveland and elsewhere, it is unusual to be called upon to see a lame horse that has not had something done to him before he was brought to me and, four times out of five, remedies have been applied to the wrong parts. This is not always for want of knowledge but is often gross carelessness. Lameness is not of itself a disease but a manifestation of it. It is generally an expression of pain and we seldom have much lameness without pain. We seldom have lameness existing for any great length of time without some inflammation; however, a stone in the foot may cause great pain before any increased heat sets in. A great many horses would appear to sort of come honestly by their lameness; therefore, in selecting breeding stock they should be free from both bone and bog spavin, thorough-pin, capped hock, bursal swellings, ringbone, side-bone, curb, navicular disease and flat feet and they should also be of good conformation and then you will find much less lameness to contend with in your horses and especially in your colts.

SWEENY—ATROPHY OF MUSCLES—WASTING AWAY OF PARTS—SHOULDER SLIP.—What is understood by sweeny is an atrophy or wasting away of the muscles of the shoulder following shoulder slip or a sprain of the shoulder muscles or other causes. Or, it may result from chronic lameness in other parts of the limb causing the animal pain which prevents the proper exercising of that quarter; so you can readily understand that sweeny of the shoulder may be a result of soreness or weakness in some other part of the limb and not in the shoulder. When you find a sweenied condition of the shoulder or hip with lameness in that quarter, make a careful examination of the whole limb before arriving at a positive conclusion that the injury is in the sweenied or wasted part.

TREATMENT.—If the lameness is in the lower part of the limb treat the diseased part to relieve the animal of pain, unless it is a mechanical stiffness that is causing the trouble, but of course stimulate the wasted muscles with any good home liniment, such as is made by mixing equal parts

of tincture of cantharides, turpentine, aqua ammonia and sweet oil and apply it to the wasted muscles daily or as often as thought necessary. Or, blister lightly with cerate of cantharides. During the winter and cooler months of the year I have obtained good results from setons, but this is a rather ancient treatment and attended with some risk. There are many kinds of liniments and blisters that act well in these cases. Muscle-making food such as oats and a good quality of mixed hay should be fed in preference to starchy, fattening food. If the animal is not lame, walking or slow exercise will assist in reproducing and growing the muscular fibres.

PEOPLE'S HOME REMEDIES FOR SWEENY.—

1. **Sweeny Cure.**—Put one ounce each of camphor gum, spirits of turpentine, tincture of cantharides and oil of hemlock; two ounces of oil of spike and four ounces of oil of origanum into a pint of olive oil. The skin should first be well pulled and lifted over the parts and then the liniment should be applied every two or three days for two or three weeks. If the blistering is too severe a few applications may be missed and the parts rubbed with lard or sweet oil.

2. **Sweeny.**—Apply equal parts of tincture of cantharides, sweet oil, hartshorn and origanum. This is an effective remedy for sweeny and shrinking of the muscles.

3. **Sweeny Cure Without Medicine.**—Pull the skin up well over the shrunken parts, make a small incision with a knife, insert a goose quill and blow full of air. The horse should then be allowed to rest or to run on pasture for a few days.

SPRAINS OF TENDONS, LIGAMENTS AND MUSCLES.—What is understood by a sprain or strain is a distention or laceration of the fibre of a tendon, ligament or muscle and the name following the word "sprain" merely indicates its location but they nearly all require the same sort of treatment and the same line of care. A sprain is usually the result of an accident caused by slipping, falling or over-exertion, such as pulling too heavy a load. Horses are sprained by making a misstep or by traveling on slippery footing or by hauling loads up a hill when the road is wet and muddy and they are not properly shod to give secure footing. Horses very often strain themselves when holding back a heavy load while going down hill; besides, I have known many horses to sprain different parts of the body when getting up awkwardly on a slippery floor. Sprains are a common occurrence among race horses, caused by over-exertion.

TREATMENT.—In every case of sprain when a rapid recovery is desired the animal should be given absolute rest until the lameness disappears. The inflammation should be subdued by cold applications in the summer months and hot applications in the winter but in order to do much good water should be applied frequently. After a few days treatment with water and perhaps bandages, apply the following lotion five or six times a day. Dissolve $\frac{1}{4}$ pound of sugar of lead and eight ounces of fluid extract of arnica in one gallon of water; or, apply equal parts extract witch hazel, alcohol and spirits of camphor twice a day. Or, apply equal parts turpentine, aqua ammonia and sweet oil once a day and later on, perhaps a blister, using cerate of cantharides once a week until recovery takes place. A laxative diet should always be substituted in place of a stimulating grain diet.

PEOPLE'S HOME LINIMENTS AND REMEDIES FOR SPRAINS, STRAINS, SWELLINGS, BUNCHES, SORES AND LAMENESS.—

1. **Salt and Vinegar.**—Bathe and bandage with salt and vinegar. This should be applied to sprained parts as hot as can be borne.

2. **California Liniment.**—To one quart of best alcohol add one ounce of aqua ammonia, one-half ounce each of red pepper and gum camphor and two ounces each of spirits of turpentine, oil of origanum, opodeldoc and black oil. These should be mixed and kept well corked. Good for sprains, swellings, rheumatism and all acute pains in man or beast.

3. **Gargling Oil.**—To one pint of good cider vinegar add one-half pint each of sweet oil and spirits of turpentine, one ounce of oil of vitriol and two ounces of castile soap. The soap should be finely shaved. Shake occasionally until dissolved. This is splendid for wounds, frostbites, swellings, etc.

4. **Liniment for Lumps, Bruises and Cuts.**—Mix two ounces of gum camphor with four ounces each of linseed oil, turpentine, and oil of spike and apply as often as necessary.

5. **Olive Oil, Camphor and Turpentine.**—Mix one ounce gum camphor with four ounces each of olive oil and turpentine. This will be found excellent for bruises, sprains, sores, and lameness.

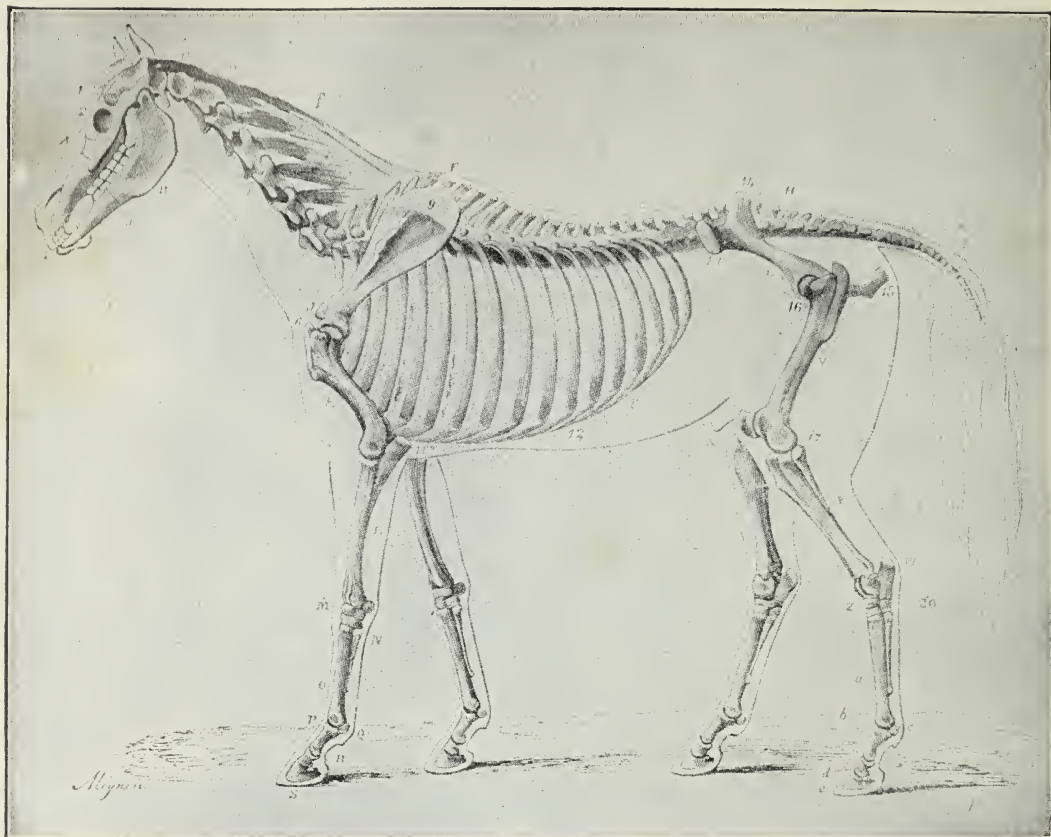
6. **English White Oil.**—Mix one pint of olive oil, one-half pint each of spirits of turpentine and alcohol and four ounces each of camphor gum and hartshorn. This will be found very healing and is good for sprains of all kinds and for reducing bunches.

7. **Lotion and Liniment for Strains and Swelled Legs.**—Steep two ounces of wormwood herb in a quart of vinegar and add a pound of salt. Bathe the parts well with this lotion and then apply the following liniment. To one quart of alcohol add one ounce of oil of spike and two ounces each of oil of cedar, oil of hemlock, camphor gum, sweet oil and turpentine. Shake well before applying. This will be found an excellent treatment for nearly all kinds of strains and swellings.

DISEASES OF THE BONE.—Diseases of the bone are of an inflammatory or non-inflammatory character. When the substance of the bone becomes inflamed we call the disease *ostitis* and the disease very often subsides, usually leaving a bunch but in many cases no lameness. In splint, spavin and ringbone we have this condition of the bone. Another form of bone disease is "caries" where the bone seems to be destroyed and comes away in particles. We find this the case in fistula of the withers and poll evil when the case is chronic. Necrosis of a bone means its destruction and these cases do not get well.

TREATMENT.—A healthy action should be brought about as rapidly as possible and if the bone is diseased cut down on the diseased part, scrape or cut it off, then apply home remedies such as carbolic acid, coal-tar dip, creosote, iodoform, boric acid or any good healing powder.

INFLAMMATION OF THE BONE—OSTITIS.—Diseases of the bone are usually either inflammatory or non-inflammatory, but it is not always an easy matter to tell which. Bones seem to become inflamed much the same as the soft tissues. When the substance of the bone is inflamed it is called "ostitis" and when the covering of the bone is inflamed it is called "periostitis" which, of course, is an inflammation of the periosteum. Ostitis may subside without forming any bony enlargement. Every bone is permeated with a



SKELETON OF THE HORSE.

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| <p>A. Head.
 B. Lower jaw.
 C. Atlas.
 D. Axis.
 E. The remaining five cervical vertebræ.
 F. Spinous processes of the back and withers.
 G. Lumbar vertebræ.
 H. Sacrum.
 I. Coccygeal, or tail bones.
 J. Scapula, or shoulder blade.
 K. Humerus, or arm bone.
 L. Radius and ulna or bones of the forearm.
 M. Carpal, or knee bones.
 N. Small metacarpal, or cannon bone.
 O. Large metacarpal, or cannon bone.
 P. Os sufraginis, or pastern bone.
 Q. Sesamoid bones.
 R. Os coronæ, or lower pastern bone.
 S. Os pedis, or coffin bone.
 T. Ribs.
 U. Pelvis.
 V. Femur, or thigh bone.
 X. Patella, or stifle bone.</p> | <p>Y. Tibia and Fibula, or leg bones.
 Z. Tarsal, or hock bone.
 a. Large metatarsal, or cannon bone.
 b. Upper pastern bone.
 c. Sesamoid bones.
 d. Lower pastern bone.
 e. Coffin bone.
 f. Ligamentum nuchæ, or neck ligament.
 1. Cranium.
 2. Orbital cavity.
 4. Incisor teeth.
 5. Molar teeth.
 6. Shoulder joint.
 9. Cartilage of prolongation.
 11. Ulna, or elbow bone.
 12. Rib cartilages.
 13. Point of the hip; outer angle of the ilium.
 14. Point of the croup; inner angle of the ilium.
 15. Ischium.
 16. Hip joint.
 17. Stifle joint.
 19. Calcaneum.
 20. Cuboid.</p> |
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sort of net work of minute blood vessels carrying nutriment to build, grow and nourish them; now, when the bone is injured and an inflammation is set up, interfering with the circulation through the bone, changes soon begin to take place. At first a fluid is thrown out, which is called lymph and this may soon change into pus, settling either on the surface or in the interior. Or, a hardening of the lymph takes place closing the blood vessels and limiting the supply of blood, then some ulceration of the bone may take place. Inflammation of the bone very often results in the formation of a bony bunch called exostosis; or, it may result in what is called caries, meaning the gradual destruction of the bone. This latter we very often find in chronic cases of poll-evil and fistulous withers. Sometimes in hock lameness there is very little enlargement but an ulceration of the surface of the bones has been going on and this may be followed by a necrosis or complete destruction of the bone. Such conditions are serious and are incurable when joints are much involved.

GENERAL SYMPTOMS.—In slight cases there is some soreness but seldom much lameness, unless trotted on a very hard road. The bone is tender when tapped with a piece of wood and in cases where the inflammation is great the lameness is extreme. When suppuration takes place in the interior of a bone the pus may remain imprisoned for a long time, but it causes great pain. When pus forms between the bone and its covering and is not allowed to escape, it often does great harm and when pus forms deep in a bone the bone usually bulges and enlarges somewhat. Ulceration of the bone often follows exposure of the bone to air or to pressure of pus and when it is going on a strong disagreeable odor is thrown off, differing from all other odors. Death of a bone is generally associated with an open sore and if the discharge is felt it will be found to contain grit and it will also blacken silver. If the wound is probed the bare bone can be felt.

GENERAL TREATMENT.—In the first treatment of the bone it is always a good plan to first try soothing remedies, such as hot or cold water. A dose of purgative medicine generally helps. Cooling astringent lotions are proper remedies; put one-fourth pound sugar of lead, one-half ounce alum, and three ounces sulphate zinc into a gallon of cold water; or put one pint of alcohol, one-fourth pound saltpeter, two ounces muriate ammonia and one quart cider vinegar into a gallon of cold water and apply to sore parts five times a day. One part alcohol, five parts witch-hazel and five parts water is a good remedy. When the acute inflammation has subsided apply equal parts tincture iodine, spirits camphor and alcohol to sore parts daily. Later apply one part red iodide mercury and eight parts lard or apply cerate of cantharides. In treating bony tumors it is well to understand that mineral acids remove them but always leave a scar; besides, if applied over a joint they may do harm by producing open joint. Cutting off bony bunches should be done with care. The skin should be opened and the bunch removed with a chisel or bone cutter and the wound should be treated with great care. Many times the distension of a fibrous membrane stretched over a bony bunch causes great pain and lameness. When this is cut relief comes quickly, but when the operation is performed great care should be taken not to introduce any air or infection.

FRACTURES—BROKEN BONES.—What is generally meant by a fracture is a broken bone. However, in surgery it means any breaking of the texture of a bone or other hard structure. Fractures are common in all

the lower animals; perhaps more so in the horse and dog than in other animals. There are four kinds of fractures met with—simple, compound, comminuted and compound comminuted. Simple fracture is that form wherein the bone is broken nearly straight across. Compound fracture is where the broken bone pierces the flesh and skin. Comminuted fracture is where the bone is broken in several places. Compound comminuted fracture is where the bone is shattered, cutting the soft tissues, and is rather complicated.

CAUSES.—External violence is one of the causes, such as kicks, blows, and coming in contact with hard substances while going fast. Muscular contraction when tied and confined for surgical work, rearing and falling, slipping and heavy pulling are all causes of fracture.

SYMPTOMS.—As a rule it is not difficult to tell when a bone is broken for there is generally great pain and by motion a grating noise is produced by the ends of the broken bones rubbing together. If the break is deep seated it may be puzzling for the bones are held pretty well in position by heavy muscles and the bones may not be much if any out of place.

TREATMENT.—It is astonishing how fast a fracture mends in an animal if the bones are put in place and held there. The whole object of treatment should be to put the bones back in place as quickly as possible and keep them there. When a fracture occurs in a part of the body which cannot be reached and the bones are much out of place the horse had better be killed for he will never recover. Always put the bones back in place promptly and apply splints and bandages that have been starched; or use plaster of Paris. It is often necessary to place the animal in slings.

EXOSTOSIS OF THE JAW.—This is quite a common affection of the lower jaw and consists in one or more small bony bunches on the jaw.

CAUSES.—The curb chain causes the most of them and the tight nose strap produces some; also, eating out of small iron feed boxes is another common cause of exostosis.

SYMPTOMS.—Sometimes they are small round bunches, but they may be quite flat and spread over considerable of the lower jaw. They do not always do much harm but spoil the appearance of the jaw.

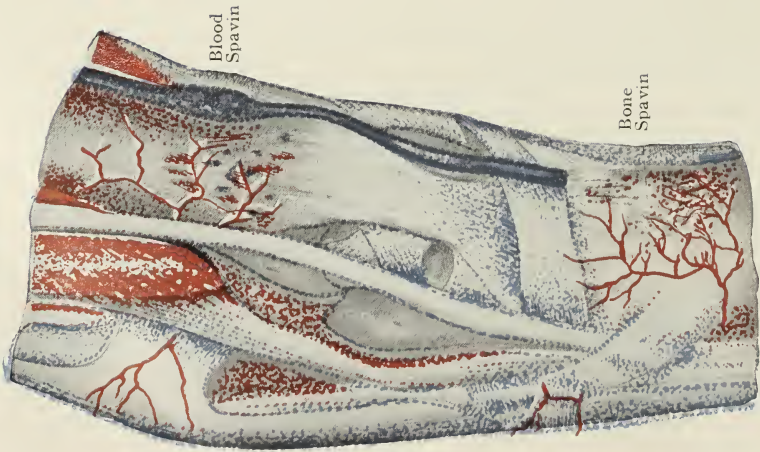
TREATMENT.—Give one-half dram iodide potassium at a dose in either feed or water twice a day for twenty days, then give the medicine once a day for thirty days. Apply iodine ointment. This you can secure at any drug store and it should be applied every day or two.

BONE SPAVIN.—Bone spavin is a bony growth (exostosis) involving the hock joint, generally affecting the front and inner, lower portion of the joint. There is always considerable irritation, causing more or less inflammation of the bones. Whenever this inflammation affects the synovial membrane and covering of the bones, there will be lameness, but there may be no enlargement. But when there is any exudation (oozing out) of bony matter there will soon be an enlargement, showing what part of the joint is involved.

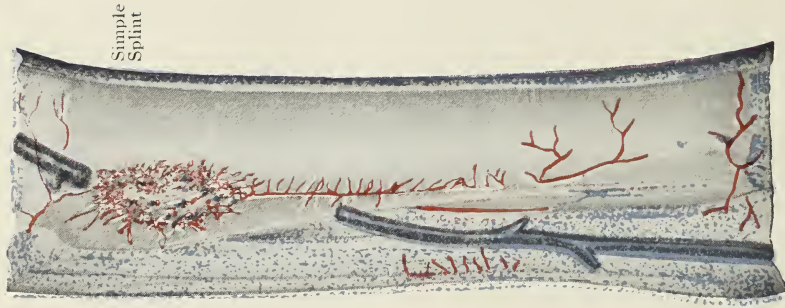
CAUSES.—The causes of spavin are hereditary and exciting. The predisposing causes are horses with heavy bodies and light, weak, crooked hocks; these are the animals that appear to come honestly by bone spavin. I have known hundreds of horses of the same family to suffer from bone spavin lameness without ever working a day; consequently, they must have inherited a predisposition to this disease. The exciting causes are bruises of the joint, sprains, injuries, hard work and fast driving on hard roads,

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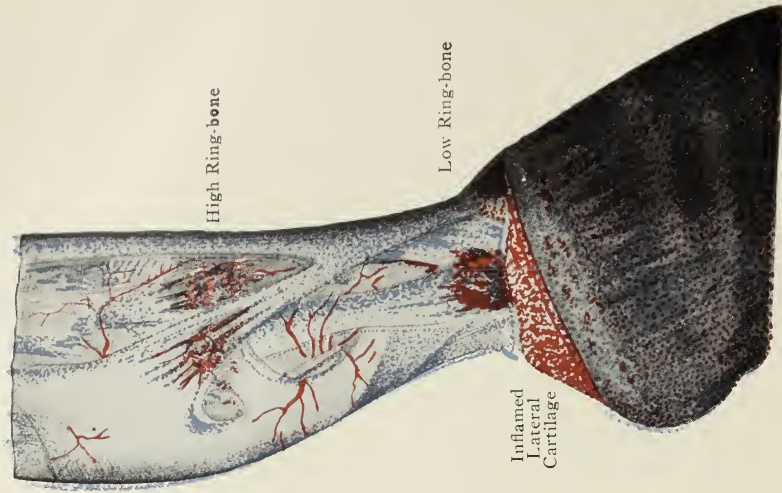
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SPAVIN.



SPLINT.



RING-BONE.

producing concussion and setting up an inflammation of hock joint, especially if the joint is crooked and narrow from the front to the back.

SYMPTOMS.—A horse suffering from bone spavin lameness usually steps shorter with the lame leg and starts quite lame but grows less so after traveling a short distance. The exercise appears to stimulate a secretion of synovial fluid (joint²oil) which oils the joint, relieving the pain and making the horse more comfortable but, as soon as he is allowed to stand still for a few minutes, he will start lame again. In more severe cases and of longer standing the lameness does not disappear very much with exercise. In nearly all cases of spavin lameness the horse steps on the toe when starting or stepping over in the stall and very often shows a great deal of lameness when traveling through deep mud or snow. When a spavin is causing lameness, the joint is usually inflamed. This is easily ascertained by wetting both hock joints with cold water; the diseased one always dries first. In chronic cases the muscles of the hip are generally wasted some from lack of exercise but this must not mislead you in determining the trouble.

TREATMENT.—If an exciting cause has produced spavin, this cause should be removed before we can expect a recovery to take place. Unless the affected bones can be grown into a solid bone the horse will remain lame. In my practice and at my hospital I have treated thousands of cases of bone spavin and those that have recovered from their lameness were given absolute rest until they traveled sound and after getting well they remained so. The inflammation of the joint should be reduced with either hot or cold water applications. After applying these for a few days, apply any good home liniment, iodine ointment or light blisters, such as cerate of cantharides, or equal parts of tincture cantharides, turpentine, aqua ammonia and sweet oil. Apply once a day until the parts blister. Or, apply one part red iodide mercury, one part powdered cantharides and eight parts fresh lard. These applications should not be made oftener than every week or ten days. There are many other blisters that you may use that will perhaps give you good results. Should blisters fail to reduce the lameness, have the horse fired. I have succeeded in relieving many cases by cutting a tendon which crosses the hock joint. This operation should not be attempted by any other than a skilled surgeon. A high-heeled shoe always relieves a spavined horse when traveling. Young horses are far more likely to recover from spavin lameness than old ones and when a horse with spavin warms out of his lameness he should recover if given sufficient rest and proper treatment.

PEOPLE'S HOME REMEDIES FOR SPAVINS, SPLINTS, RING-BONES, ETC.—

1. **Cantharides, Etc.**—To one ounce of lard and one-half ounce of tar add 2 drams each of cantharides and corrosive sublimate and rub this mixture in thoroughly for about ten minutes. Twenty-four hours later apply vaseline and do this every night and morning until the blister has healed.

2. **Spavins, Splints and Ringbones.**—To one-half pound of lard add 2 ounces of turpentine, one ounce of cantharides and three drams of biniodide of mercury. These should be thoroughly mixed and then applied to spavins, splints or ringbones every week or ten days and the blistered surface should be healed with vaseline. This will be found to be an effective remedy.

3. **Soap, Salt and Turpentine for Bone Spavin.**—Mix salt, turpentine and soft soap to make a soft salve. Apply three days and leave off for

three days but rub each day; then apply for six days and then rub gently until there is an oozing out of yellow matter. After this apply once every two or three days as long as there is a swelling.

BOG SPAVIN AND BLOOD SPAVIN.—A bog spavin is a sort of puffy swelling situated on the fore part of the hock joint. The capsular ligament is always distended and on account of the irritation of the joint there is always an increased secretion of joint oil (synovial fluid). Associated with bog spavin we generally have thorough-pin. If an enlarged or varicose vein passes over the spavin it is sometimes called blood spavin.

CAUSES.—Bog spavin is generally brought on by hard work, fast driving, heavy pulling, irregular exercise and a predisposition from faulty conformation of the hock joint. This is sometimes an hereditary ailment.

SYMPTOMS.—The symptoms are exceedingly plain, for this puffy bulging of the joint can readily be seen. When this ailment occurs on a heavy horse, producing no lameness, it should not be regarded as serious but when it occurs on lighter horses it should be regarded with suspicion, especially if there be a deposit of calcareous matter in the joint, for these cases are difficult to treat successfully. The more tense and hard is this swelling, the less likely is the animal to recover.

TREATMENT.—As stated, a heavy horse may suffer from bog spavin and it never hurt him; these cases should be let alone. Cold applications and sometimes hot applications are helpful; however, cold seems to produce the best results. Hand rubbing and slight pressure from a truss and bandaging with pad are beneficial. Stimulating liniments, light blisters and sometimes firing produce excellent results. Some practitioners recommend drawing off this fluid with an aspirator, then injecting some iodine into the joint; however, this must be regarded as rather dangerous, unless done by an expert and even then it very often sets up a violent inflammation of the joint, causing the animal great suffering; therefore, all things considered, it is not good practice.

PEOPLE'S HOME REMEDIES FOR BOG-SPAVIN, BLOOD SPAVIN AND THOROUGH-PIN.—

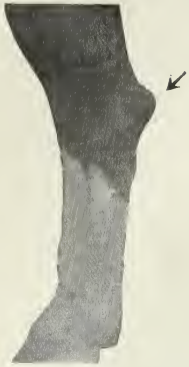
1. **Bog and Blood Spavin and Thorough-Pin.**—Mix three drams each of cantharides and biniodide of mercury with four ounces of lard. Clip the hair and rub the ointment well into the parts. In forty-eight hours wash the parts clean and apply sweet oil every day. Repeat every ten days until cured. Tie the horse so that he cannot reach the parts.

CURB.—A curb is a rupture or a sprain of a short ligament situated on the back part of the hock joint. The upper portion of the back tendons may also be sprained at the time of injury.

CAUSES.—Many animals on account of having crooked hocks are liable to curb. This is on account of the hock being narrow from back to front and also on account of its being weak. Over exertion is the principal cause.

SYMPTOMS.—A swelling usually appears suddenly on the back part of the hock which is tender on pressure and is generally inflamed. The lameness is usually noticeable but in some cases it is very slight. It is best seen by looking at it sideways. The least curve on the back part of the hock indicates a curb.

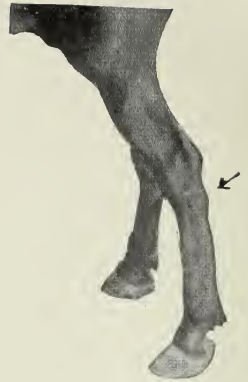
TREATMENT.—The treatment does not differ from any other sprain of a ligament or tendon. It is important to give the animal rest. Reduce



CAPPED HOCK.



BOG SPAVIN.



CURB.



BONE SPAVIN.



SPLINT.



BOWED TENDONS.



SIDE BONE.



LINE FIRING.



RING-BONE.

the inflammation by applying cold water or put one-half pound of sugar of lead into a gallon of water and apply five or six times a day. After the inflammation subsides blister with cerate of cantharides or apply one part of red iodide of mercury and eight parts of lard or vaseline.

SPLINT.—A splint is a hard bony bunch situated on the cannon bone on either side of the foreleg but most often on the inside and just below the knee. Sometimes they are on the hind legs, but not very often. When they are situated close to the knee and affect the joint or are close to the suspensory ligament they produce lameness but if situated on the shaft of the bone they seldom do much harm. When a splint is forming it generally produces slight lameness when the horse trots on hard roads, but he walks sound.

CAUSES.—Concussion is the general cause of splints. They also come from blows, kicks, bruises and sprains. Striking the shin with the opposite foot causes a great many splints.

SYMPTOMS.—When first forming the colt may walk sound and trot lame. The shin is usually hot and tender but if not near the knee the soreness soon disappears.

TREATMENT.—Give the colt rest and apply either hot or cold water for a few days. Apply the following lotion: sugar of lead, one-fourth pound; tincture arnica, one pint; water, one gallon; apply five times daily. Later apply liniment, iodine ointment or a light blister.

PEOPLE'S HOME REMEDIES FOR SPLINTS.—

1. **Iodine.**—Apply tincture of iodine daily for five or six weeks. This will frequently remove splints.

2. **Ointment for Splints.**—Make an ointment of three ounces of lard, three drams of powdered cantharides and two drams of biniodide of mercury. Clip the hair from the parts and rub in the ointment for fifteen minutes. On the third day apply sweet oil or lard to soften and remove scab. These applications should be repeated three times a month.

THOROUGH-PIN.—Thorough-pin is very often associated with bog spavin and is a bursal enlargement, usually in connection with the flexor muscle or capsular ligament of the hock joint. It rarely produces lameness; therefore, it is not considered a serious ailment.

CAUSES.—It is generally the result of a sprain; however, many of the heavy breeds of horses appear to be heir to this ailment for this puffy condition of the joint appears at or soon after birth.

SYMPTOMS.—In this trouble there is always a puffy swelling on each side of the hock joint. It is not painful. When pressure is applied to one side it increases the bulging on the opposite side.

TREATMENT.—If there is lameness the horse should be rested and the inflammation subdued with either hot or cold applications. Or, put $\frac{1}{4}$ pound of sugar of lead into one gallon of cold water and apply to the joint five or six times a day, then apply cerate of cantharides once a week. Where the swelling is very great the fluid can be removed and a truss applied to prevent further distension; however, this work should be done by a skillful veterinarian and even then it should not be done unless the horse is to receive extra good care after the operation. It is always difficult to reduce a thorough-pin and almost impossible to entirely remove it. It is considered by veterinarians to be good practice to leave a thorough-pin alone if it is not very large and produces no lameness. Equal parts of spirits

of camphor and tincture of iodine have given me very good results in the treatment of thorough-pin without resting the horse.

OPEN JOINT.—This results from an injury caused by either a sharp or dull pointed substance making a wound which penetrates the inner structures of the joint and allows the synovial fluid to escape. If there is a simple, small puncture, or cut, the wound may close quickly but if the tissues are badly bruised and lacerated considerable inflammation follows and the case becomes serious.

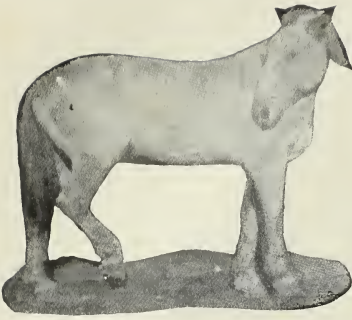
TREATMENT.—One of the greatest mistakes that is usually made is the probing of such wound with a dirty probe. This very often infects the joint and makes the case a difficult one to treat while if it had been let alone a recovery might have taken place. It is always a good plan to remove sand or gritty matter or hairs and dirt that may have been punched into the wound at the time of the accident. The edges of the wound should be stitched closely together and hot packs dipped in a lotion composed of one part bi-chloride of mercury and one thousand parts of water should be kept on constantly for several days. The animal should be kept perfectly quiet. It is fairly good practice to apply a light blister to that part of the joint not wounded. This produces swelling and very often closes a wound, thus giving it an opportunity to protect the open joint and allowing an adhesion and union of the edges which otherwise could not have taken place. The greatest danger lies in the movement of the joint, which of course stimulates the secretion of synovia, thus making the case worse. One part carbolic acid and thirty parts water is a good dressing; or, dissolve one ounce of powdered alum or one ounce of sugar of lead or one ounce of sulphate of zinc in a quart of water. Any of the three are proper remedies to apply. I have obtained good results by dusting on equal parts of iodoform, boric acid and powdered alum once a day. In treating such cases, remember that they seldom recover unless the animal is kept from moving about.

PEOPLE'S HOME REMEDIES FOR OPEN JOINT, OLD SORES, SCRATCHES, ETC.—

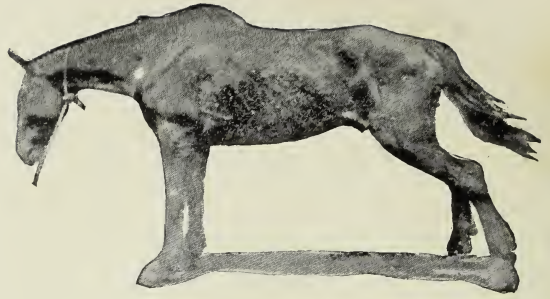
1. **Alum, Bluestone, Vinegar, Etc.**—To a pint of good vinegar add one ounce each of powdered alum, bluestone and sugar of lead. Bathe the parts for fifteen minutes with water as hot as can be borne and then apply this lotion. This recipe has saved a number of valuable horses.

HIP JOINT LAMENESS—ARTHRITIS OF HIP JOINT—WHIRL-BONE LAMENESS.—Lameness of this kind is not common; nevertheless, it is astonishing how many horsemen hold to the opinion that their horse is lame in the "whirlbone," as they call it, when they are lame elsewhere. The hip joint is well protected and is really the strongest joint in the body, being formed of some of the heaviest bones and held in place by a powerful ligament; besides, it is well protected by heavy muscles. Inflammation may occur in the joint, the result of injury, and we find rheumatic trouble in this joint, but it is seldom sprained.

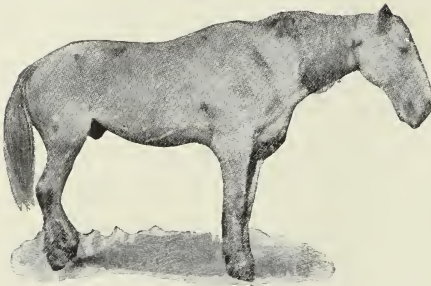
SYMPTOMS.—When the hip joint is inflamed the foot is raised from the ground and is lowered against the will of the animal. This is on account of the lameness being painful. Atrophy of the muscles is pretty sure to follow lameness of the hip joint if it lasts a few weeks. There is always difficulty in bringing the limb forward and the toe is dragged near the ground. In some cases it is well to use the old test by placing a piece of board over the hip joint and striking it a blow with a mallet, which



FRACTURE OF THE FEMUR.



INFLAMMATION OF THE
KIDNEYS.
(Chronic.)



SPRAIN OF THE PATELLA
LIGAMENTS.



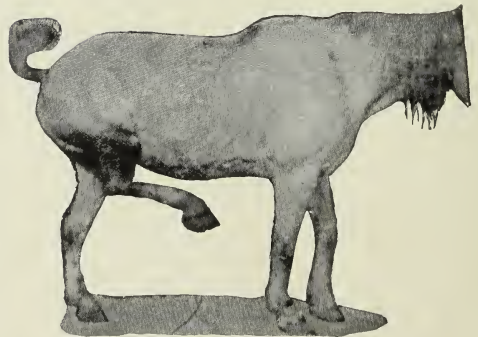
DISLOCATION OF PATELLA—
STIFLED.

Horse drags stifled leg.



COLD ABSCESS, SITFAST, BOG
SPAVIN AND THOROUGHPIN.

A sitfast (fibrous tumor) weighing $2\frac{1}{2}$ lbs. was removed from this horse's shoulder at Dr. Fair's Veterinary Hospital. Note bog spavin and thoroughpin on each hind leg and also large cold abscess on shoulder just above elbow.



INFLAMMATION OF THE
BLADDER.

causes great pain if the hip joint is sore and inflamed. Should this test fail, look for the lameness in some other part of the leg.

TREATMENT.—Apply hot fomentations and give the animal rest. If occurring in the summer season, use cold water and if in winter, use hot water. Apply equal parts of turpentine, tincture cantharides, aqua ammonia and sweet oil every day or two and if you find it necessary to blister use cerate of cantharides. I have frequently obtained good results from setons. I dislike to put them into the hip during hot weather but for a deep-seated ailment like this they are of great value.

DISLOCATION OF THE PATELLA—STIFLED.—The stifle of the horse is very much like the knee of man and when a dislocation takes place the cap slips out of the pulley-like groove in the bone in the front part of the stifle joint and of course when this happens the leg locks and it is impossible for the animal to lift his foot forward. A dislocation is generally caused by the foot slipping backward and the limb twisting when the weight of the body is on it.

SYMPTOMS.—When the stifle bone is out of place the leg is generally kept back of the body with the foot close to the ground. The stifle appears to be swollen.

TREATMENT.—In some cases starting the animal with a whip will cause him to bring the limb forward suddenly and the cap will slip into place; however, it is usually necessary to draw the foot forward either by lifting it or attaching a rope or strap round the fetlock and passing it through a collar on the neck and pulling it forward and when in this position an assistant should press the bone into position. Apply cerate of cantharides to the stifle joint as a blister. Sometimes it is necessary to keep the foot tied forward and the hind feet a little higher than the forefeet.

SPRAIN OF THE STIFLE JOINT.—When the ligaments of the stifle joint become stretched from slipping or from an injury, setting up inflammation and causing the animal to have trouble in bringing the leg forward, we are led to believe that he suffers from a sprain of the joint.

TREATMENT.—If occurring in the summer, shower the stifle with cold water three or four times a day, or dissolve $\frac{1}{4}$ pound of sugar of lead in a gallon of water and apply this lotion five times a day, or dissolve $\frac{1}{4}$ pound saltpeter in $\frac{1}{2}$ gallon of vinegar and add a gallon of water and apply this lotion five times a day. After the inflammation subsides apply any good home liniment twice a day; or, use equal parts of turpentine, aqua ammonia and raw linseed oil once a day and later on if it is thought necessary blister with cerate of cantharides.

STONE BRUISES—BRUISES OF THE SOLE OF THE FOOT.

CAUSES.—Horses with flat weak soles frequently bruise the bottom of the foot by stepping on pebbles, clinkers, pieces of brick, bolt heads and other hard substances.

SYMPTOMS.—The bruised foot soon becomes hot and tapping the sole with a small hammer or block of wood causes considerable pain. If allowed to go on, the coronet swells and the inflammation increases; the lameness also becomes more noticeable and in some cases the horse will scarcely put his foot to the ground. He usually holds the lame foot in advance of the other foot and steps either unusually long or quite short.

TREATMENT.—If he is shod, remove the shoe; tap the sole of the foot lightly to locate the sore spot and if you suspect that pus has formed

cut through the sole, making a very small opening and then pour in equal parts of peroxide of hydrogen and water and then apply one part carbolic acid and thirty parts water or a good healing powder composed of equal parts of iodoform, powdered alum and boric acid. If the opening through the sole is made large, proud flesh is liable to grow in the wound and if it does, apply burnt alum or crude carbolic acid or cut it off with a sharp knife or burn it down with a point of a red hot iron and continue applying healing remedies.

SPEEDY CUT—BRUISED KNEE.—This usually results from a blow with the opposite foot in horses that have high knee action and that have narrow chests or toe out. Horses driven in deep snow are inclined to strike their knees. Following the blow there is more or less swelling on the inside of the knee and it is not unusual to have a serous sac or an abscess form which contains pus.

TREATMENT.—When first noticed the inflammatory stage can be subdued by the continued use of either hot or cold applications and some cooling astringent lotion such as is made by dissolving one-quarter pound acetate of lead in a gallon of cold water and adding one pint of fluid extract of arnica. These applications should be made five or six times a day. The knee should not be bandaged unless by an expert. If much fluid forms it may be necessary to allow it to escape through a small tube or if pus forms it should be allowed to escape with proper drainage, then treat it as an abscess. Certain horses, from conformation, can scarcely be shod so they will not strike their knees, especially when going fast. The lighter the shoes, the less knee action; besides, if the inside of the shoe is made a little heavier this has a tendency to carry the foot out. The head should not be reined up high. The horse should be driven slow on rough roads and when turning a corner. I have owned many horses which required the knees to be protected with boots when they were driven fast, no matter how capable the shoer might have been. However, I recommend having a horse of this kind shod by the best mechanic you can find.

SPRUNG HOCK.—Sprung hock is a sprain of the ligaments of the hock joint, bringing on an inflamed condition of the parts and usually resulting in an enlargement of the joint. It usually occurs in animals with crooked joints.

CAUSES.—This condition is usually the result of injuries following a runaway or is caused by falls, slipping, kicks, blows or fractures.

SYMPTOMS.—The animal is usually very lame and stands with the hock flexed, never attempting to place any weight upon the limb. In severe cases the whole joint is badly swollen and very tender; this should be regarded as a serious injury.

TREATMENT.—In all such cases it is important to give the animal absolute rest. Apply either hot or cold applications constantly and when the inflammation and pain subside, apply iodine ointment or some stimulating and mildly counter-irritating liniment, such as equal parts turpentine, aqua ammonia and sweet oil, or any other good home liniment you may have on hand.

CAPPED HOCK.—Capped hock is due to distension of a small bursa situated beneath the skin on the point of the hock. Or, it may be a distended bursa situated deeper and when the deeper-seated parts are affected it is more serious.

CAUSES.—Capped hock is generally caused by kicking against the stall,

or by kicks or blows. The heavy breeds of horses are the most likely to become affected. This is perhaps on account of their sluggish circulation. It also seems to follow debilitating diseases.

SYMPTOMS.—There is a soft, puffy and very often painless swelling on the point of the hock, containing a water-like effusion.

TREATMENT.—The secret of success in the treatment of capped hock generally lies in one's being able to remove the cause; hence, if caused by kicking in the stable in a single stall, remove the horse to a box stall or pad the single stall. Hot water applications are proper for early treatment and should be followed by daily applications of equal parts of alcohol, tincture of iodine and spirits of camphor. When it becomes necessary to open the sack it should be done with great care and cleanliness. A small opening should be made and the parts kept wet with one part bichloride mercury and 500 parts tepid water. This will keep the parts from becoming infected. Fairly good results follow applications of red iodide of mercury, one part, and lard, eight parts; apply this every week or ten days. This should be the treatment in chronic cases.

CAPPED ELBOW—ELBOW TUMOR—SHOE BOIL.—

CAUSES.—These are usually caused by the heels of the shoe when the horse is obliged to lie down in a very narrow stall. They are also caused by the harness and by blows.

SYMPTOMS.—There is first a hot, tender swelling and if not treated properly and the cause removed this grows and increases in size until it becomes very large and especially is this true if it occurs in hot weather. A few days after the injury the swelling will fluctuate, indicating that it contains fluid and this fluid being serum may do very little harm. In other cases pus forms, which generally makes the horse quite lame. If the swelling contains serum, it may be absorbed and the bunch almost disappear, but if it contains pus it should be opened.

TREATMENT.—Apply either hot or cold applications; I prefer cold applications in summer and hot ones in winter. If the swelling contains serum and is not very large apply tincture of iodine once or twice a day and it will perhaps cause the fluid to be absorbed, but if the swelling is extensive and contains much fluid it should be drawn off with a canula and trocar and the sac injected with a small quantity of tincture of iodine once a day. In many cases I find it good treatment to lay the sac freely open and if it contains a hard bunch, cut it out. Chronic elbow tumors can be treated successfully in no other way than by cutting them out. Following an operation of this kind the wound always heals slowly. Apply peroxide of hydrogen twice a day and dust on equal parts of iodoform, boric acid and tannic acid, but be sure to prevent his bruising the sore parts. In some cases I find it necessary to keep the horse in a standing position until the wound heals, and horses that bruise their elbow should wear a roll around each pastern to prevent the shoe from coming in contact with the elbow.

WOUNDS.

(Including Abscesses, Poll-Evil, Fistulous Withers, Saddle Galls, Sore Shoulders and Wounds of all Kinds.)

WOUNDS.—Wounds are a division of the soft structure of the body and are named according to their appearance, depending on how and by what sort of an instrument they were produced.

INCISED WOUNDS.—Incised wounds are those made with a sharp knife or some sharp substance making a clean cut and their length is greater than their depth. When a muscle is cut off the wound always gaps wide open, much more so than if the muscle is cut lengthwise and when cut transversely it makes a bad-looking wound.

PUNCTURED WOUNDS.—Punctured wounds are those made with a dull instrument or stick and may be caused in hundreds of different ways. There is no use of enumerating them but a punctured wound should always be looked upon as being much more serious than an incised wound.

LACERATED WOUNDS.—Lacerated wounds are those which are more or less torn. They are not very deep and are often caused from coming in contact with wire, being kicked by a horse or running against some sharp substance, but these wounds are not often serious.

CONTUSED WOUNDS.—Contused wounds are those caused by bumping against blunt things or are inflicted by a blow or by over-reaching or striking or by being kicked by a horse without a shoe or with a dull shoe.

WOUNDS AT THE JOINTS.—These are quite often serious for there may be open joint in connection and if so they are not easily treated successfully. They may be caused by a splinter of wood or by a pitchfork prong. Whenever the discharge is stringy and odorless and the animal very lame it indicates open joint.

POISONED WOUNDS.—These are those made by a snake but are not common in this country. Of course many wounds are poisoned by things people apply but this should not be the case.

TREATMENT OF WOUNDS.—In the treatment of wounds it is well to keep in mind that the bleeding should be arrested first. If an artery is opened it should be tied at once with fine silk, linen, or catgut and if it is to be left in it should be a substance which will be absorbed without causing any irritation or suppuration; hence the necessity of using sterilized catgut. The wound should be irrigated or washed out with one part bi-chloride of mercury and one thousand parts tepid water; then the edges of the wound should be brought together and stitched closely. If the parts are clean when the sewing is done and the animal is kept in a clean place the wound will generally heal rapidly. It must be remembered that if impure air is kept away from a wound it will suppurate less and heal more quickly. There is always a great difference of opinion as to what remedy will heal a wound most quickly. I am of the opinion that many of the simple home remedies are as good as any and a wound generally does well if it has plenty of pure fresh air. Keeping wounded animals in dirty, filthy stables and barnyards is



KNEE-SPRUNG.
A very bad case.
(Photographed especially for this book.)



WIND PUFFS OR BURSAL ENLARGEMENTS.
Thirty-year-old horse with bursal enlargements (wind puffs) on knee and hind fetlocks. (Photographed at Dr. Fair's Veterinary Hospital especially for this book.)

bad practice for they seldom do well. Most of the modern healing remedies are superior to the old ones. I have obtained good results by using peroxide of hydrogen, carbolic acid, coal-tar preparations, acetate of lead, sulphate of zinc, tannin, boric acid, alum, oxide of zinc and bi-chloride of mercury. Use but one of these and of course in water as they should generally be reduced. Nearly all watery lotions should be applied twice a day. If a wound fills with a fungus, burn it with nitrate of silver or other caustic or burn with a red-hot iron.

PEOPLE'S HOME REMEDIES FOR WOUNDS, CUTS, ETC.—

1. **Kerosene Oil.**—Frequently apply kerosene oil to the cuts. It is an inexpensive remedy but it is as good as anything that can be used.

2. **Lard and Tar.**—Mix equal parts of lard and pine tar and apply freely to cuts and sores. This is not only healing but it also keeps the flies away.

3. **Onions and Lard.**—Boil onions in lard and make as strong of onion as possible. This should be strained and of course kept clean. Apply to flesh wounds once a day.

4. **Vinegar, Eggs, Turpentine and Ammonia.**—Take equal parts of these, shake well, let stand 10 or 12 hours and apply twice a day.

5. **Glycerine and Carbolic Acid.**—Bathe the parts with a mixture of one part of carbolic acid with ten or fifteen parts of glycerine.

6. **Alum or Bluestone.**—If proud flesh appears it should be treated with either burnt alum or powdered bluestone.

7. **Wounds and Cuts.**—To 8 ounces of linseed oil add one ounce of carbolic acid and one dram each of oxide of zinc and iodoform. This should be mixed thoroughly and applied twice a day.

8. **Burns and Scalds.**—Bathe the parts with a solution of common baking soda or a weak solution of sugar of lead.

9. **Lime Water and Linseed Oil for Scalds and Burns.**—Apply a mixture of equal parts of lime water and linseed oil. This mixture is called "carron oil" and is one of the best things known for burns and scalds on either man or beast.

10. **Carbolic Acid and Sweet Oil for Cuts.**—Apply one part carbolic acid and ten parts sweet oil to wounds twice a day.

SCREW WORMS OR MAGGOTS IN WOUNDS.—(See "Cattle Department.")

AIR UNDER THE SKIN.—(See "Cattle Department.")

PUNCTURED WOUNDS OF THE FEET.—Punctured wounds are of frequent occurrence in cities and especially about glass works and iron and nail mills.

CAUSES.—Punctures of the feet are most commonly caused by stepping on nails, pieces of iron, sharp stones, cinders, broken pieces of glass, sharp snags of wood or any sharp uneven substance.

SYMPTOMS.—It is generally not very difficult to tell whether a horse has a punctured foot or not if the accident has occurred a day or two before; however, in slight cases where the wound is not large or deep, it is very often quite puzzling to locate it. A puncture of the foot should always be regarded as a serious ailment for it is generally done with a dull, hard, and dirty substance; besides, a portion of dirt is generally driven into the foot at the time of the puncture and if the substance remains in any great length of time it is quite likely to set up considerable inflammation. When the snag

or nail is pulled out, dirt and foreign bodies are usually stripped off and left in the foot, thereby producing inflammation which is soon followed by the formation of pus. The foot is usually hot and tender and when the horse is resting he stands upon the toe. In severe cases the leg is sometimes swelled clear to the body and is accompanied with great pain, quick pulse and often loss of appetite and some fever.

TREATMENT.—Wash the foot clean, search for the seat of injury and if the nail, snag, or other foreign body is still in the foot, pull it out and cut down to the bottom of the wound and allow the pus and dirt to escape. Apply peroxide of hydrogen and ten minutes later apply one part carbolic acid and fifteen parts water; or, coal-tar disinfectant full strength twice a day. Each day stand the horse in hot water to which has been added one part of bi-chloride of mercury to one thousand parts of water. Clean and well-prepared poultices relieve the pain. Treat these punctures as advised in treating wounds.

PEOPLE'S HOME REMEDIES FOR NAIL PUNCTURES.—

1. **Lye Water and Poultices.**—Stand the foot in lye made of wood ashes and hot water. After two hours in this lye make a poultice of the lye and some corn meal and apply to the foot keeping on for six hours but changing frequently to keep it hot.

2. **Peach Leaves.**—Put some juice obtained from peach leaves into the wound and bind on some of the crushed leaves which should be moistened. This will be found a very effective remedy.

3. **Coal Tar Disinfectant.**—Apply one part coal tar disinfectant and ten parts water to wound twice a day.

4. **Powdered Borax.**—Fill the wound with powdered borax and cover it with cotton batting or wool.

PRICKING.—Whenever a horse shoer drives a nail into the sensitive foot instead of through the insensitive horn or wall of the hoof, we call it pricking; however, it may have been entirely accidental.

CAUSES.—In most cases it is the result of carelessness on the part of the horse shoer. A nail sometimes splits, one part going into the sensitive foot and the other going in as it should. Sometimes a nail is driven into and withdrawn from the sensitive foot without even the knowledge of the shoer. Nails fast in boards or frozen ground very often puncture the sole of the foot and pull out.

SYMPTOMS.—Whenever a horse steps on the toe and keeps the heel of the foot up, also when it keeps the foot off the ground and the foot is very hot, be sure to examine for foot punctures or pricks. If a nail is driven too high, tap the hoof opposite the nail and if he is pricked this tapping will hurt him.

TREATMENT.—Remove the cause as quickly as possible and this is best done by pulling out the nail. Treat the puncture as I have directed for punctured wounds.

WOUNDS OF THE LIPS.—(See "Cattle Department.")

BITES OF INSECTS AND SNAKES.—(See "Cattle Department.")

FRACTURE OF THE HIP BONE—HIPPED.—In young animals the little nodule on the extreme angle of the hip is often broken off by blows before it has become firm with the parent bone, but the most common injury of the hip of both young and old are fracture of the bone and a fracture of the hip seldom takes place without the point remaining somewhat

lower than the opposite side and also a little ways in, thus giving the point of the hip a smooth appearance.

CAUSES.—It is caused by falling on hard ground, by blows, coming in contact with the sides of doors or stall posts and fracturing the bone or bones of the hip.

TREATMENT.—As a rule the animal should be placed in slings to keep him in a quiet condition until the bones unite. In some cases a fibrous union takes place which means a poor and unsatisfactory recovery; however, if the bones of a young horse are kept in proper position a bony union generally takes place and a satisfactory recovery follows. Hot fomentations relieve the pain somewhat and should be kept up constantly for two or three days after the accident occurs and it is well to apply equal parts of tincture of arnica, laudanum, spirits of camphor and witch hazel, three or four times a day and if this mixture produces pain add some water to it. A hipped horse usually steps a little shorter with his imperfect hip and hitches some when trotting, but many of them are about as useful after the accident as before. If the bones are badly shattered the horse should be destroyed.

ABSCESS.—Abscesses consist of accumulations of water, serum or pus and are generally held within a wall and may arise in any part of the body. They are usually classed as acute and cold, the latter being of a chronic character. Acute abscesses are generally found in the glands or muscular parts of the body.

CAUSES.—Abscesses are very often the result of a bruise or injury of some kind or they may be the result of infection; also, many germ diseases, such as strangles or distemper, appear to terminate in abscesses. Whenever an animal suffers from blood poisoning he is very likely to have an abscess in some part of the body. It is also a common termination of tuberculosis and of lung, kidney and liver diseases. Abscesses very often form in the chest or abdomen.

SYMPTOMS.—When an abscess is the result of a bruise it is more or less inflamed and tender, usually increasing in size and tenderness until it is either opened or breaks of itself. When abscesses form in the body the animal usually suffers from chills and fever.

TREATMENT.—Whenever you think that an abscess is forming the aim should be to hasten its development as rapidly as possible. This is best accomplished by hot fomentations and poultices. The principal object of poultices is to keep up the heat and moisture. Constant application of fomentations of hot water or hot packs or a hot water bag are of great service in hastening suppuration or the forming of pus. I have also found daily applications of the following liniment to have a good effect. Take turpentine, one part; aqua ammonia, one part and sweet oil, six parts. If you have no sweet oil use raw linseed oil. It will do no harm to make these applications twice a day. As soon as the hair plucks out easily and the swelling fluctuates, open and allow the pus to escape. Inject some peroxide of hydrogen and ten minutes later use one part carbolic acid and thirty parts water or any other useful home healing remedy. Chronic cold abscesses should be opened or cut out if possible.

COLD ABSCESS.—Cold abscess is a term applied to a swelling that usually contains pus in its center. These abscesses are very often situated on the neck, shoulder, or withers and may be of enormous size and gradually settle down until they are not very large. This pus is usually walled

in with fibrous, gristle-like tissue. Many times these abscesses apparently do very little harm.

CAUSES.—They are usually the result of a bruise or an injury of some kind.

SYMPTOMS.—The swelling is seldom painful on pressure, very often movable and not always deep-seated. Swellings of this kind are extremely common on the lower part of the shoulders, on the withers and on the poll or back part of the head.

TREATMENT.—Whenever they are suspected to contain pus they should be cut open and, if possible, their entire wall removed. Then apply any of the home remedies, such as lotions made of sugar of lead; one ounce to one quart of water; sulphate of zinc, one ounce to one quart of water; sulphate of copper, one-half ounce to one quart of water; carbolic acid, one part to thirty parts water; or any of the coal tar disinfectants that may be on hand. I have found in the treatment of such cases very little benefit from external applications without opening the abscess; however, if you use any apply tincture of iodine once a day.

POLL-EVIL.—Poll-evil is an abscess which is usually the result of an injury of some kind affecting the muscles on the upper and fore part of the neck. Little vitality exists in the diseased parts and pus very often burrows down beneath the muscles and remains there until it affects the bones. This ailment is not now nearly so common as many years ago when ceilings of stables were much lower than they are now.

CAUSES.—Poll-evil is caused in a variety of ways but it can generally be traced to either direct or indirect injuries, such as striking the head against the upper part of a doorway, wearing badly-fitting halters or bridles, to jumpers wearing a yoke, pressure from over-check, or blows. These are the most common causes of abscess on the poll or head.

SYMPTOMS.—There is always some swelling, heat and tenderness which, if not relieved, soon spreads and if it persists it indicates the formation of pus. The nose is poked out somewhat to relieve the top of the neck. In some cases a sort of cold abscess forms which does not appear to cause much trouble and a swelling of the muscles remains after the inflammation of the parts has subsided.

TREATMENT.—The treatment depends upon the stage of the case. If but recently bruised, apply either hot or cold applications and give cooling laxative diet and the recovery takes place quickly. If pus forms, allow it to escape, inject one part peroxide of hydrogen and three parts water slowly twice a day. Then inject some carbolic lotion, one part to thirty of water; or coal-tar disinfectant, one part to twenty of water, twice a day after using the peroxide of hydrogen. (See treatment for bruises and abscesses, also Home Remedies following "Fistulous Withers.")

FISTULOUS WITHERS.—A fistula is a tube-like channel that discharges and is tardy in healing. It may affect any part of the body; however, in horses the poll and withers and heel seem to be the favorite locations for fistulæ.

CAUSES.—They are usually the result of an injury or bruise of some kind causing a swelling to appear on one or both sides of the withers which in a few days may become soft and contain fluid. If left to itself the swelling increases, breaks and discharges its contents. The discharge at first is usually thin and watery, containing some blood and later on some yellow



DISTEMPER OR REGULAR
STRANGLES.



POLL-EVIL.

Often caused by striking head against
low ceiling.



FISTULOUS WITHERS.



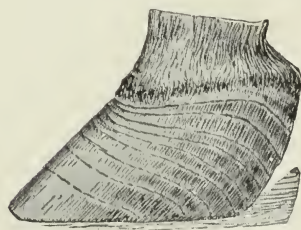
BIG HEAD—OSTEO POROSIS.

White lines show enlargement.



WEAKNESS OF LIGAMENTS OF
LOWER JOINTS.

Causing fetlocks to descend. Also curb.



A TYPICAL FOUNDERED FOOT.

In bad cases the wasting of the sensi-
tive substances causes shrinking of the
foot.

particles similar to pus. The tendency of the wounds is to heal but not remain so, filling up and breaking open every few weeks or months.

TREATMENT.—Open the swelling and allow its contents to escape. Slowly inject one part peroxide of hydrogen and three parts water; this will clean out the pus. Take strips of muslin that have been dipped in perchloride of antimony and insert in fistula and allow it to remain in for two, three or four days, repeating the application every three or five days. After the wound appears to have been stimulated enough, use mild healing remedies, such as carbolic acid and water, one to twenty; bi-chloride mercury, one to one thousand; chloride of zinc, one to one thousand; or, dissolve one-half ounce permanganate of potash in one gallon of water and use this; or, use coal tar disinfectant, one part to fifteen of water. When the swelling first appears, hot fomentations or cold packs may prevent effusion or the forming of pus. In chronic cases I believe in using the knife freely and in some cases it is necessary to remove a portion of the bone before a cure can be effected. For washing out pus and washing off the shoulder, use the peroxide of hydrogen.

PEOPLE'S HOME REMEDIES FOR FISTULA AND POLL-EVIL.—

1. **Muriatic Acid and Lye.**—Cleanse the sore thoroughly and drop on several drops of muriatic acid each day until it looks like a fresh wound; then wash with castile soap suds and let it heal. If there are pipes, a bit of concentrated lye may be wrapped in two thicknesses of white tissue paper and inserted in each pipe. The lye in the pipes and the acid on the sore will cure every case. Keep the bowels open while administering this treatment.

2. **Preventive of Fistula and Poll-Evil.**—At the beginning give oil or salts to open the bowels and then give one-fourth ounce of saltpeter three times a day in the feed or water. Three or four times a day pour cold water from a height upon the inflamed parts. This pouring should be continued for an hour each time. If resorted to in time this treatment will prevent an abscess forming and any further trouble.

3. **For Fistula or Poll-Evil Before the Formation of Pus.**—To 6 ounces of alcohol add 4 ounces of camphor gum and 2 ounces each of oil of spike, oil of sassafras, oil of tansy and beef's gall. This will be found a sure cure if applied once a day before the formation of pus.

SORE BACK—SADDLE GALLS, COLLAR GALLS AND SORE SHOULDERS.—These ailments are usually the result of an exciting cause, such as friction produced from badly-fitting saddles or back pads. This is also true regarding sore shoulders and necks and breasts, which are almost invariably the result of dirty, badly fitting, shoulder or breast collars. The soft, tender shoulders, breast and back of a young horse should be toughened somewhat before he is put to hard work and especially in warm weather; it is seldom necessary in cold weather for horses do not gall nearly so easily then.

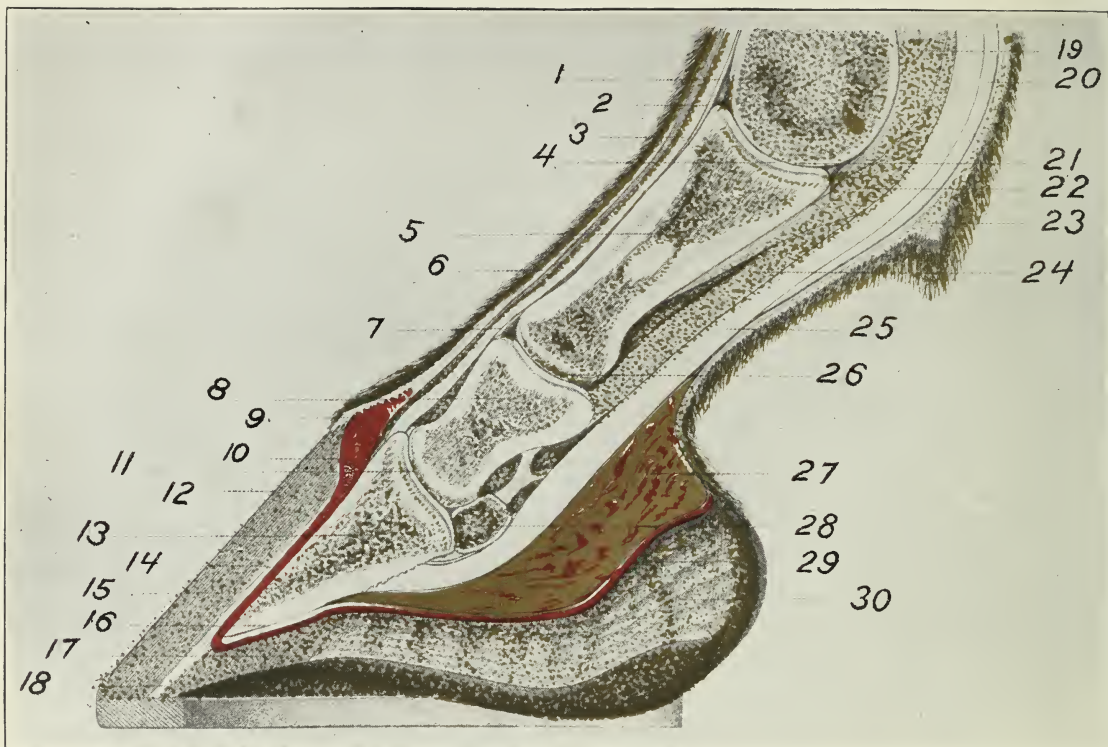
TREATMENT.—First of all, if it is possible, remove the cause, which is generally a bad-fitting harness or saddle. When starting to work young horses or those who have been long idle, the shoulders should be washed with cold water, adding a tablespoonful of salt to each quart. This should be done not less than three or four times a day. Or, apply the following lotion which is not expensive and will heal and toughen sore and tender shoulders and backs. Dissolve four ounces of sugar of lead, three ounces of sulphate of

zinc and two ounces of tannic acid in a gallon of cold water and apply to tender parts four or five times daily. By soaking oak bark in water and making a tea and applying it the parts will toughen. If the sore is raw apply peroxide of hydrogen twice a day and ten minutes later apply equal parts sub-nitrate of bismuth, oxide zinc, powdered alum and sulphur. Nearly all healing remedies are proper ones to apply to sore shoulders and backs. Remember it is very important to keep the collar and saddle clean.

PEOPLE'S HOME REMEDIES.—

1. **Copperas and Blue Vitriol.**—To a pint of water add one dram of copperas and one-half dram of blue vitriol. Wash the galled spots with soap suds before applying this solution.

2. **Milk and White Lead.**—Moisten some white lead with a little milk and apply twice a day to the galled parts. The parts should be washed before each application.



SECTION OF THE HOOF AND PASTER.N.

- | | |
|-------------------------------|-------------------------------------|
| 1. Cannon bone. | 16. Sensitive sole. |
| 2. Ligament of fetlock joint. | 17. Horny sole. |
| 3. Extensor pedis tendon. | 18. White line. |
| 4. Fetlock joint. | 19. Suspensory ligament. |
| 5. Os suffraginis. | 20. White line. |
| 6. Skin. | 21. Articular cartilage. |
| 7. Capsular ligament. | 22. Sesamoidian ligaments. |
| 8. Os co. o. re. | 23. Ergot. |
| 9. Coronary band. | 24. Flexor pedis perforans tendon. |
| 10. Periople ring. | 25. Flexor pedis perforatus tendon. |
| 11. Coffin joint. | 26. Pastern joint. |
| 12. Periople. | 27. Plantar cushion. |
| 13. Os pedis. | 28. Os navicularis. |
| 14. Sensitive laminae. | 29. Sensitive frog. |
| 15. Horny wall. | 30. Horny frog. |

DISEASES OF THE FETLOCK, ANKLE AND FOOT.

(Including Ring-Bone, Side-Bone, Wind-Galls, Corns, Quarter Crack, Sand Crack, Quittor, Thrush, Over-Reaching, Interfering, Knuckling, Founder, Etc.)

RING-BONE.—Ring-bone is a ring of bony material extending around the pastern just above the hoof. It is the result of inflammation in the cancellated tissue of the bone. We have two kinds of ring-bone—high and low. The high ring-bone affects the pastern joint, while the low kind very often involves the coffin joint. Sometimes there is a deposit of bony matter on the pastern, affecting no joint. This must be regarded as less serious than either of the other two. In some cases I have known the fetlock to become affected.

CAUSES.—As in bone spavin the causes are predisposing, or constitutional, and exciting. The close inbreeding and the mating of sire or dam that suffers or has suffered from ring-bone, are very likely to produce offspring that suffer from this disease, especially if they are subjected to any of the exciting causes to which I shall refer. Hard work and fast driving, also any severe injury to the pastern or foot may produce ring-bone. Improper shoeing is another very common cause. Horses with short, upright pasterns when driven fast on hard roads before they have fully matured are quite likely to suffer from ring-bone.

SYMPTOMS.—It is well to keep in mind that a natural enlargement of the parts may readily be mistaken for a ring-bone; consequently, many a sound horse is subjected to torture on account of some ignorant person having pronounced him unsound from ring-bone. Occasionally a ring-bone will form without producing much pain or any lameness, but as a rule the horse shows considerable lameness during the period of its development. When a ring-bone appears on the foreleg the horse steps on his heel. This is done to remove the weight from the toe. When it appears on the hind leg the animal always steps on his toe, and when traveling he brings the foot forward carefully. At first the enlargement is usually soft but later on it hardens. By flexing (bending) the joint or trotting the horse on hard footing it always increases the pain and lameness.

TREATMENT.—The treatment of ring-bone is very similar to that of bone spavin. First subdue the inflammation with either hot or cold applications. Give him rest and apply counter-irritation. If the foot is not level it should be made so and light blisters applied. If they fail, have the animal fired. When blisters and firing fail, try plantar neurectomy for it is very often successful in relieving the animal of pain and making him go sound. This operation consists in removing an inch or more of the nerve, either above or below the fetlock, on both sides of the leg. I have known a bar shoe to give considerable relief and I have also known many cases to recover without much rest when the animal was used for slow work on soft footing.

A ring-bone situated low down should be regarded as a serious ailment and even when the disease has subsided the animal may go stiff on account of the joint's being ankylosed.

PEOPLE'S HOME REMEDIES FOR RING-BONE, STIFF JOINTS, BUNCHES, ETC.—

1. **Ring-Bone.**—Apply equal parts of oil of origanum, corrosive sublimate and tincture of myrrh. Use this carefully as it is quite severe. This gives excellent results.

2. **Bunches, Stiff Joints and Ring-Bone.**—To eight ounces of turpentine add 2 tablespoonfuls of salt and the white of a dozen eggs and apply to bunches, stiff joints or ring-bone, once a day.

SIDE-BONE.—This consists of an ossification of the lateral cartilages situated partly within and partly above the heel on either side of the foot.

CAUSES.—Side-bones are frequently met with in all heavy breeds of horses and in some horses it is no doubt the result of a hereditary tendency. In the lighter breeds of horses it often produces lameness and is very often the result of keeping the heels too high. Another cause is fast driving on hard roads, which produces a great deal of concussion; it is also the result of injuries, such as punctures and bruises which set up an inflammation causing ossification of the cartilage. It is often the result of poor shoeing, too much of the pressure being placed on the wall of the foot.

SYMPTOMS.—There is an enlargement and tenderness of the cartilage with a hardening which produces lameness in some cases.

TREATMENT.—If the horse is to be worked, shoe him with a bar shoe, applying pressure to the frog, bar, sole and wall; besides, it is important to lower the heel and drive the horse as slowly as possible when on hard roads. It is all the better if driving can be avoided. Subdue the inflammation with hot or cold applications and apply either tincture of iodine, iodine ointment or some good home liniment. Or, apply light blisters of cerate of cantharides, or one part red iodide of mercury and twelve parts lard every few days until a recovery takes place. In my practice and at my hospital I often find it necessary to perform a surgical operation. We sometimes give the animal an anæsthetic after he is cast; or, the operation can be done in a humane and painless manner by injecting a six per cent. solution of cocaine hypodermically over the important nerves leading to the foot. When the side-bone is removed, the operation should be performed by a surgeon and the wound kept perfectly clean until it heals. A recovery usually takes place in three or four weeks. There are no cases of side-bone that are incurable under this treatment.

WIND-GALLS—WIND-PUFFS.—Wind-galls are soft, puffy, bursal enlargements situated on the back part of the leg just above the fetlock joint; however, the same ailment affects horses in different parts of the body in the form of enlarged bursæ, in connection with the tendons. In a majority of cases wind-galls are not productive of much harm; however, in some cases they do become hard and tender, producing lameness, especially where a joint is affected. We often meet with bursal swellings in the knee and hock which are, of course, of the same character as a wind-gall and on account of their location injure the horse.

CAUSES.—The early cause of wind-galls is generally over-exertion, fast driving on hard roads or pulling too heavy loads and a great many horses, on account of inherited faulty conformation, seem to come honestly by them,

for very slight exciting causes seem to be productive of them. A horse with straight, upright pasterns is more likely to suffer from wind-galls than a horse that has oblique pasterns; but the heavy, coarse breeds of horses seem to get them without doing much hard work.

SYMPTOMS.—A soft, puffy, painless swelling, without much heat, situated near a joint or a tendon may be called a wind-gall. Chronic wind-galls are very likely to become hard.

TREATMENT.—In the early stages of this ailment, pressure applied by small pads with a bandage over them has a good effect. Alcoholic stimulants or cooling astringents applied to them also have a good effect. Put $\frac{1}{4}$ pound of sugar of lead and three ounces of muriate ammonia into a gallon of water and apply four or five times a day. Or, apply equal parts of spirits of camphor and iodine. Showering with cold water, during the summer time, is very beneficial. When the bunches harden apply iodine ointment. I have sometimes found it necessary to use an aspirator, drawing off the fluid by suction. Sometimes, injecting a weak solution of iodine proved successful; however, opening wind-galls is work for a veterinarian. Wind-galls often return when the horse is put to work.

CORNS.—A corn is a simple bruise of that part of the sole included between the bars and the wall of hoof at the heel, but later there is generally an increased growth of horn and the formation of a horny tumor which presses on the quick. In other cases the bruise sets up an active inflammation which is soon followed by the formation of matter or pus which, is not allowed to escape, will burrow toward the coronet and break. When this condition occurs it is called quittor. Corns are most common in flat feet and on horses with low heels and are usually situated on the inside quarter.

CAUSES.—Improper shoeing is no doubt the most common cause of corns. They are caused by allowing horses to wear their shoes too long, keeping the heels too high, using too narrow shoes, fast driving on hard roads, weakening the foot by too much cutting and an uneven distribution of pressure which results from leaving the inner heel too high. In fact, any cause that will produce contraction is likely to cause corns.

SYMPTOMS.—The animal is usually lame and in some cases extremely so, usually pointing the foot if only one be affected. A horse may have a corn and show very little soreness or lameness when walking, but if trotted on hard footing will show it plainly. A very good test to ascertain whether or not he has a corn is to tap the quarter gently with a small hammer or piece of hard wood and if he shows pain it is a good plan to remove the shoe; but, before doing so, upon tapping the opposite quarter he should show no pain whatever unless a harder blow is struck than on tender quarter. The heel is usually a little feverish and many times pressure applied to the coronet will produce pain and when walking he will show a tendency to trip and stumble. When the shoe is removed the bruised quarter will be found somewhat inflamed; or, you will find, perhaps, a small pebble or gravel. However, gentle pressure on the quarter will determine whether the corn is producing lameness or not.

TREATMENT.—Remove the shoe and pare down carefully, but never dig down deep with a dirty knife. When the corn is reached the pus will run if there be any present. The sole should not all be cut out and only a small opening should be made to allow the matter to escape. Pour in some

peroxide of hydrogen or any good home healing remedy. Avoid using caustics or active counter-irritants. Generally speaking, a bar shoe is preferable to an open one. Keep in mind the importance of relieving the quarter and removing the cause. A three-quarter shoe may be used in some cases. In many cases, especially chronic ones, the corn can be completely removed and the wound healed in two or three weeks; however, when this is done the operation should be performed by a veterinarian and the foot given good care and kept clean after the operation.

QUARTER CRACK—CRACKS IN THE WALL.—Cracks in the wall is a condition of the foot due to a separation of the wall of the hoof. It is called sand crack when sand or gravel is found in the sore and when the split in the hoof is near the heel it is called quarter crack.

CAUSES.—Many horses seem to be predisposed to foot ailments of this kind. They usually have thin, weak hoofs, perhaps flat. It is caused by the heels being kept too high, the hoofs being rasped too thin, injuries to the coronet, soaking the hoofs too much if they are not kept moist afterward and by uneven shoeing.

TREATMENT.—First of all the foot should be made level and a bar shoe applied carefully so that there is pressure on the sole, bars, frog and wall, except that part of the wall under and near the crack. The edges of the crack should be thinned and the hoof cut through at the coronet. This cut or burn should be at right angles to the crack, then the wall will grow down solid. A nail should be driven through the edges of the crack and riveted; or, a copper plate with small screws should be applied to the hoof to hold the parts together. Wet swabs or poultices help take out the soreness. Many times, using a three-quarter shoe is the best way to shoe a horse that goes lame from a quarter crack.

SAND CRACK.—A sand crack is a separation of the wall of the foot running parallel to the fibers of the wall. It shows in the fore part of the hoof and no doubt derived its name from its being so common in sandy countries.

CAUSES.—Horses with weak, flat feet very often have sand cracks and it would seem as though they came honestly by them. Certain breeds seem predisposed to sand cracks. Keeping the heel too high, lack of moisture, standing on dry floors, and lack of regular exercise are the common causes of sand crack.

SYMPTOMS.—The crack usually appears quite suddenly, causing some lameness and, on close examination, a little blood will be found at the top of the hoof. The crack usually commences at the top of the hoof and extends downward. When buying a horse it is well to examine for sand crack for if the hair is long it might be overlooked.

TREATMENT.—Burn or cut through the hoof at the coronet and draw the edges of the crack together with a nail, clip, or plate and screws.

QUITTOR.—This disease is indicated by a swelling on the heel which is generally discharging pus through a sinus or what is commonly called a "pipe." This is a serious ailment when occurring in animals with strong feet.

CAUSES.—It occurs as a result of bruises, treads, pricks, corns, punctures, wounds and quarter cracks.

SYMPTOMS.—In many cases lameness is the first symptom noticed.

On examination a hard swelling is discovered on the heel, which soon opens and discharges pus. Some time later several openings may be discharging matter from this same quarter of foot.

TREATMENT.—If it is possible to ascertain the cause, remove it at once. Foment the foot in warm salt and water. If no pus is coming from the bunch, poultice with bran, linseed meal, carrots or antiphlogistine. Cutting away any horn that may be pressing on bruised parts or thinning the wall may relieve the swollen heel. If it is the result of a suppurating corn (gravel), open lower part of heel to obtain drainage and use peroxide of hydrogen; ten minutes later pack opening with equal parts of iodoform and boric acid and then cover the heel wound with oakum and keep the foot quiet and perfectly clean. If the quarter is open at coronet the wall of heel should be lowered and weakened by thinning it. In some cases the sinus or wall of the abscess, may be scraped out and it may be necessary to remove a portion of the wall in order to get at the abscess. It is well to keep in mind that proper drainage is important, dropping a grain or two of bi-chloride of mercury (corrosive sublimate) to the bottom of a pipe will slough out the sinus. It may be necessary to repeat this application and as soon as the parts appear healthy use peroxide of hydrogen and such astringents as permanganate of potash, carbolic acid, sulphate of zinc, sugar of lead, or coal-tar disinfectant, but be sure to keep the foot clean and free from external infection. If the lateral cartilages are diseased badly it may be necessary to remove them before a recovery will take place.

THRUSH.—Thrush is a diseased condition of the fatty frog, or may be an irritation of the sensitive structures of the back part of the foot. It is characterized by an offensive discharge from the cleft of the frog.

CAUSES.—Thrush is often the result of standing in filthy stables or running in filthy barnyards. It may result from inflammation of the coffin joint; standing too much in cold water; stuffing the feet with cow dung or any filthy, irritating foot dressing; and, I might say, it is far more prevalent in warm weather and warm climates.

TREATMENT.—The most important step to take is the removal of the cause for until this is done you will fail to effect a cure no matter what remedies you may apply. Place the animal in a dry, clean stable; remove the shoes and apply one part carbolic acid and twenty parts water; or, apply peroxide of hydrogen twice a day; or, apply coal-tar disinfectant, one part, and water, fifteen parts; or, put one ounce sulphate of zinc into one quart of water and apply; or, apply calomel. These remedies should be applied daily no matter which one you use.

PEOPLE'S HOME REMEDIES FOR THRUSH.—

1. **Carbolic Acid.**—Clean the foot well and pour one part carbolic acid and twenty parts water around the frog twice a day until cured.

2. **Lard, Tar and Blue Vitriol.**—Use equal parts of warm lard, pulverized blue vitriol and pine tar. The foot should be well cleaned and the mixture applied once a day for a week and followed with applications of salt for another week. If not better at the end of the second week the mixture should be applied again as before.

3. **Turnip and Charcoal Poultice.**—Pare away the diseased parts of the horn and for a day or two apply a poultice of boiled turnips to which has been added a handful of powdered charcoal and a few drops of carbolic acid. Then

clean the parts and apply dry calomel and dress with oakum and apply a bandage. This will be found very effective in the cure of thrush.

OVER-REACHING—FORGING.—Over-reaching is when a horse in traveling steps on the back part of the forefoot with the hind one. Forging is when a horse which travels much the same way strikes the bottom of the foot or shoe, causing an unpleasant noise.

CAUSES.—Perhaps the most common cause is peculiar conformation, such as high hind quarters with lower fore quarters. This gives the animal a greater reach, seemingly, than if the hind quarters were lower. Besides, conformation accounts for peculiarity of action; therefore, line trotters move the hind feet forward under the body instead of opening out wide and going clear and perhaps strike the forefeet. It is also the result of wearing too heavy shoes on the hind feet, thereby lengthening the animal's stride. It is also induced by light shoeing in front.

SYMPTOMS.—Wounds or bruises on the back part of the forefeet should cause a suspicion of over-reaching and the condition of his hind toes and marks made on the bottom of the shoe, also a noise when traveling, are all indications of forging.

REMEDY.—A majority of young colts over-reach and forge. This is not a bad symptom. However, it very often only occurs while establishing the animal's gait. To remedy this ailment the action in the front feet should be increased, while that of the hind feet should be retarded. Increase the weight of the fore shoes and allow slight rolling motion; behind they should be shod very light, the toe of foot kept long and a toe calk used with but little or no heel. This prevents or rather retards quick action. Where there is a tendency to over-reach and grab the front shoe it should be made as short as possible. Also keep in mind the importance of keeping up the front heels and lowering the hind ones.

INTERFERING—STRIKING FETLOCK JOINTS.—Nearly every colt when being broken to drive interferes more or less and a great many horses, because of faulty conformation, can hardly avoid interfering. A majority of those that do strike the fetlock, shin or knee with the opposite foot interfere behind, which is not as serious as when they strike in front. By watching horses closely I find that one-fourth of them strike when traveling and it is safe to say that a larger percentage of trotting and pacing horses strike. Of course many of them do not strike hard enough to bruise or wound the leg. There are several reasons why so many horses interfere. Improper shoeing is one; shoeing with too heavy shoes is another; driving or working horses until they become tired and leg weary is another cause and driving horses on rough uneven footing causes most of them to strike.

TREATMENT.—It is almost impossible to shoe some horses so they will not interfere. These are cases where the animal toes out much in front or has very narrow hips. However, the worst cases can be helped by proper shoeing. In some cases it is necessary to wear boots or pads to protect the shin. Shoe with light shoes instead of heavy ones; keep the foot level and add some weight to inside of shoe—but keep the foot level. If one kind of shoe fails to correct this trouble, have your shoer make a change and as a rule the horse shoer knows best how to correct this trouble. Therefore, I advise horse owners to listen to the shoer rather than to interfere with him.

PUMICED FOOT.—This disease is the result of an inflammation of the foot that has become chronic for want of proper care at the proper time. I have known neglected cases of founder to terminate in bad cases of pumiced foot. Whenever an effusion takes place in the foot it should be allowed to escape or else it may give rise to a disease of the foot such as I have mentioned.

SYMPTOMS.—By looking at the sole of the foot it will be found convex instead of concave as it should be. The bone of the foot drops and the horse travels much like a foundered horse.

TREATMENT.—I always apply a wide-webbed shoe with bar and pack the bottom of the foot so as to support the sole and by following up such cases it is astonishing how much each one can be helped even if not made entirely well. A horse in this condition should be used on the farm for slow work, but seldom driven on the road. In some cases treatment will prove quite unsatisfactory and it is better to destroy the horse.

BREAK-DOWN—RUPTURE OF THE SUSPENSORY LIGAMENT.—What is understood by a break-down is when a rupture of the suspensory ligament takes place. This ligament is situated between the knee and fetlock and runs between the back tendons and shin bone. In race horses the forelegs are more likely to be affected, but in draft horses that are used for heavy pulling the hind legs generally suffer.

SYMPTOMS.—When both branches of this ligament are torn loose the lameness comes on suddenly and the animal suffers great pain; the fetlock descends and of course the toe turns up and the leg is swollen and very much inflamed. In mild cases there is scarcely any lowering of the fetlock and not nearly so much inflammation in the leg.

TREATMENT.—When rupture of the ligament has taken place and the horse is unable to rest any weight on the injured limb, he should be placed in slings and either hot or cold water should be applied to subdue the inflammation and very often it gives relief to apply an elastic bandage. The aim should be to get the leg back into its normal position as quickly as possible. Therefore, a high-heeled shoe and bandages to support the leg are helpful in the treatment of break-down. After the inflammation subsides use any good home liniment and later apply every week some cerate of cantharides to blister the parts mildly. Continue this until he travels sound.

KNUCKLING—COCKED ANKLE.—When the fetlock joint tips forward it is termed knuckling or cocked ankle. The seat of trouble may not be in the ankle but in some other part of the leg.

CAUSES.—Colts are sometimes born with this weakness, the fetlock being thrown forward and the pastern being erect, making the colt somewhat predisposed to knuckling. In older horses it is generally the result of a sprain of the ligaments of the fetlock or other ligaments or tendons of the leg. Fast driving and heavy pulling are both causes of knuckling.

SYMPTOMS.—The fetlock joint is thrown forward too far and the joint rocks back when the animal moves but when standing still is cocked forward.

TREATMENT.—Colts, if they are well fed, recover without anything else being done. In older horses when it is the result of a sprain, give rest and shower with cold water in summer or apply hot water in winter. Apply any home liniment that you have found useful for sprains in man and good results will follow. Apply equal parts of turpentine, aqua ammonia and raw

linseed oil once a day. If you believe it necessary to blister use cerate of cantharides, which every druggist can supply. There are many liniments and blisters on the market which are equally good in the treatment of knuckling. It is important to keep the heel a little higher than the toe; this your shoer can do, but harm can be done if it is placed too high.

NAVICULAR JOINT LAMENESS—COFFIN JOINT LAMENESS.—

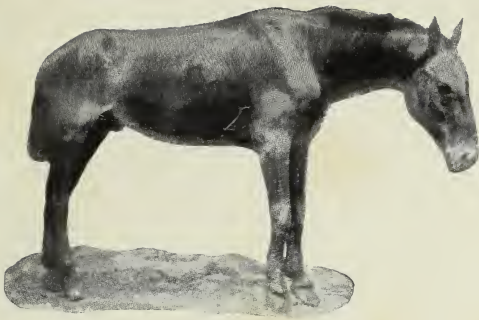
This is an affection of the joint within the foot. The synovial sac, ligaments, tendons or bone may be affected.

CAUSES.—It is usually a disease of the lighter breeds of horses that are used for road or fast work. It also follows concussion or injuries to the foot from bad shoeing, and it may also arise from stone bruises and contraction of the foot. It may also be a rheumatic ailment affecting this particular joint or it may follow derangement of the digestive organs caused by over-feeding of grain or allowing a fatigued horse to drink too much cold water. These are the common causes; however, there are many other causes which have a tendency to produce a diseased condition of the navicular or coffin joint.

SYMPTOMS.—The horse points the affected foot ten or twelve inches in advance of the other with the heel slightly elevated when standing quietly in the stable or in harness after a drive. This pointing may have gone on three or four months before the animal shows lameness. The horse has a tendency to step short, stub the toe and stumble when first driven, but the lameness lessens and he may go sound after traveling a mile or two. However, lameness soon returns. The toe of the shoe wears most; the foot feels hot, especially the back part, and it is sometimes swollen and bulging over quarters and the foot soon commences to contract. Pressing the thumb over the middle of the flexor tendons on either the inner or outer side as low down as it can be reached produces pain. Following chronic lameness, there is more or less atrophy of the limb, which is sometimes mistaken for sweeny. Tapping the bottom of the foot with a hammer near the heel usually produces pain.

TREATMENT.—In a majority of chronic cases the treatment is unsatisfactory. However, in recent cases they may get well. First of all, subdue the inflammation with either cold or warm water or poultices and then apply a light blister. Some relief follows shortening the foot and slightly raising the heel. If occurring in the summer season a run on low land that is moist will always help a case of this kind. Frog setons are recommended by some veterinarians, but these should be inserted and the foot looked after by a veterinarian or bad results may follow. When all other remedies have failed to subdue the lameness and effect a cure, cutting the nerves and removing not less than one inch either above or below the fetlock always gives relief. However, certain cases should not be operated on. If the bone is diseased and if the feet are weak and flat the results are not satisfactory. All cases of navicular disease are helped by standing the horse in wet clay and by applying wet swabs while they are in the stable and, as a rule, repeated blisters applied to the coronet do good, but bear in mind that a majority of cases never get well. I have known many cases of coffin joint lameness in the early stages to be relieved by turning the horse into low wet pastures and using him on soft footing instead of on hard roads.

FOUNDER—LAMENITIS.—Lamenitis is an inflammation of the whole



IRREGULAR STRANGLES.



CONGESTION OF LUNGS.

Fore limbs apart and well under body. Nostrils are flapping and the eye has a deadly stare.



EFFECTS OF SUNSTROKE.



ACUTE LAMINITIS (Foundered).
(Feet close together.)



AZOTURIA.

Hind quarters paralyzed. Can get up with fore limbs but not with hind limbs.



IMPACTION OF LARGE BOWEL.

of the sensitive structure of the foot and it occurs in the acute, sub-acute and chronic forms.

CAUSES.—It is safe to say that some horses are predisposed to laminitis, for I have known many horses with large bodies, light legs and weak flat feet to suffer from founder without any person being able to assign any exciting cause for their trouble. The horse that suffers most pain from laminitis is the one with deep round feet. Hard and fast work often causes founder. High steppers are more likely to have laminitis than if they traveled low. Improper shoeing and feeding too much grain are causes and it sometimes follows parturition. Drinking too much cold water when in a heated condition is also a cause, and there are many other causes which produce founder in horses.

SYMPTOMS.—In the acute form of founder (laminitis) there is always great pain. The animal usually has a chill before the temperature goes up, the pulse is generally full and somewhat quickened and the bowels are generally costive and the urine highly colored. If all feet are affected the animal keeps his feet well under him, but if the two forefeet only are affected he extends them somewhat in front of the body. When required to move he goes on his heels.

TREATMENT.—In the first state there is very little stiffness but very soon the temperature of the body goes up and a general stiffness sets in which is quite noticeable. The forefeet should be placed in either hot or cold water and I have obtained the best results from hot water in winter and cold in summer. However, cold water is most easily applied and generally produces good results. Standing the animal in wet clay is fully as good as either hot or cold water. Standing on soft footing gives relief. Give aconite in twenty-drop doses four times a day if he is feverish; also give a tablespoonful of powdered saltpeter in drinking water twice a day. Keep the bowels open by giving one pound of epsom salts daily until they open; or, give one pint raw linseed oil daily until the bowels loosen; or, a dose of Barbadoes aloes and calomel will open them. Walk him on soft ground.

PEOPLE'S HOME REMEDIES FOR FOUNDER.—

1. **Linseed Oil and Foot Bath.**—Stand the front feet in a tub of hot water. Give a pint of linseed oil and repeat the dose in 10 hours if it has not caused a movement of the bowels. Give the horse walking exercise.

2. **Saltpeter.**—Take the animal as soon as known to have been foundered and give a rounding teaspoonful of pulverized saltpeter. Repeat this dose in ten hours and follow with one-half pound of salts.

3. **Oil of Sassafras.**—When you first discover that the animal has been foundered give a tablespoonful of oil of sassafras; in six hours repeat this dose and follow with half a pound of salts. In all cases of founder short walks are a help rather than a hindrance to a complete recovery. We are indebted to a Granger living in Pullman, Washington, for this recipe.

CHRONIC FOUNDER—CHRONIC LAMENITIS—CONVEX SOLES

—Chronic laminitis and convex soles are generally the result of neglected or bad cases of founder that have made a poor recovery. Whenever a sub-acute inflammation of the feet occurs and lasts for any great length of time the hoofs change in shape and the wall becomes covered with rings and if any great effusion takes place in the foot the sole may drop, giving it a convex shape.

TREATMENT.—A complete recovery in chronic cases of this kind should not always be looked for or you will be disappointed. When rings have formed on the hoof and the sole has dropped low the case can be helped by putting on a wide webbed shoe, packing the sole with tar and oakum and applying light blisters to the coronet once a week. You can use cerate of cantharides or any good home blister that is not too severe. A horse that has chronic founder should be driven on soft footing, allowed to go slow and his forefeet given good care. He should be well shod and his shoes changed every 4 to 6 weeks.

PEOPLE'S HOME REMEDIES FOR HOOF-BOUND AND CONTRACTED HEELS.—

1. **Hoof Ointment.**—Apply one part coal tar disinfectant and six parts vaseline once a day. This is for cracks in the hoof and is also good to aid in growing a new hoof.

2. **Tar, Tallow and Beeswax.**—Melt together one pound of archangel tar, one-half pound of tallow and four ounces of beeswax. Apply twice a day.

3. **Hoof-Bound.**—Take 4 ounces of pine tar, 3 ounces of olive oil, and 2 ounces each of burgundy pitch, Venice turpentine, rosin and beeswax; dissolve these and add 2 ounces of spirits of turpentine. Rub well into the hoof once a day for a week or ten days.

4. **Hoof-Bound and Contracted Heels.**—Besides applying a good hoof ointment it is well to apply poultices of boiled turnips or linseed meal. This is more in the way of preventive treatment.

VARIOUS DISEASES.

(Including Inflammations, Influenza, Pink-Eye, Epizootic, Strangles or Distemper, Glanders, Bad Blood, Etc.)

INFLAMMATION.—This term is usually applied where there is increased heat with some redness, pain and swelling. The heat is a result of an increased circulation of blood to the part and no doubt there is a somewhat changed condition of the blood. The redness, however, depends upon the quality of blood and sometimes the parts may be dark if the blood is coming from an open vein and a much brighter red if the blood is leaking from an open artery. The swelling of a part does not always produce much pain, unless the pressure applies to a part of the body liberally supplied with nerves. Pain is very often a well-marked symptom of inflammation as, for instance, in founder. The results of inflammation are numerous. The inflamed parts can often be restored to their normal condition by the use of hot water, or sometimes cold applications. I have found cold applications very satisfactory in hot weather, while hot applications act best during the winter months. When an inflammation of a part goes on for some time there is an exudation which may solidify, then hot applications or an absorbent should be applied to break up the mass. We also find adhesive inflammations following too much exercise, resulting in a permanent thickening of the inflamed parts. We also sometimes find inflammation going on until suppuration takes place. Finally the abscess bursts and relief comes. As a rule heat hastens this formation of pus; besides, stimulating liniments and light blisters or poultices have the same effect. We also find inflammation terminating in gangrene (mortification). When this condition exists in a vital organ it is often fatal. However, it may occur in the lungs or bowels and a recovery take place. Of course when recovery takes place this gangrenous part must slough off. It is well to keep in mind in treating an inflamed part that the cause should be ascertained and removed if possible. As a rule the quieter an inflamed part is kept the quicker a recovery will take place. It is often well to give medicine internally as well as to apply it in the treatment of inflammatory troubles. At one time "blood letting" was practiced to reduce inflammation; however, it is seldom done now by the best veterinarians. There are cases where it proves beneficial, but I find it is often done for a fee by those who do the work, not knowing or believing that it will do the horse any good. Hot or cold water is the best and least expensive local application to reduce inflammation. Mild stimulating liniments such as are kept in the home are also very useful in reducing inflammation. Aconite, acetanilide or opium will reduce fever and nearly all the saline remedies, such as nitrate, chlorate and carbonate of potassium have a cooling effect. It is also a good plan to move the bowels and feed very little grain. Also, feed some vegetables or grass and allow the animal to drink all the cold water he craves, but not too much of it at a time.

CHILLS.—Chills are usually the result of drinking too much spring

water or ice cold water and allowing the animal to remain quiet afterwards ; or, a chill may be one of the first symptoms noticed in the commencement of a variety of internal disorders, the result of infection and the commencement of many fevers.

SYMPTOMS.—There is loss of appetite, shivering, quick breathing and quick pulse soon followed by a rise of temperature. Of course this is not a disease but only a symptom preceding other ailments.

TREATMENT.—Clothe the animal well, hand rub the legs and bandage over with cotton. Give any of the alcoholic liquors and not less than one-half pint in twice the quantity of cold water and repeat in two hours. Or, give one ounce sweet spirits nitre, one dram tincture nux vomica, four ounces whiskey and a tablespoonful or two of ginger in one quart of water as a drench, every three hours until the surface of the body becomes warm. After the chill is over it is best to give tincture of aconite in 15-drop doses every two hours to reduce the fever. Avoid subjecting the animal to exposure.

INFLUENZA—PINK-EYE—EPIZOOTIC—LA GRIPPE.—This is a specific, infectious, and contagious fever in horses and mules and after having one attack the animal is usually immune for two years or more. This disease is not by any means a fatal one if the sick animal receives fairly good care and is not exhausted by work or exposed to cold storms when sick.

CAUSES.—Nearly all cases appear to come from direct infection, the germs being carried through the air a considerable distance. An animal associating with another that has it and especially if kept in a small or badly ventilated stable is pretty likely to contract the disease. The disease sometimes prevails as an epidemic ; at other seasons it is endemic. For some reason the disease appeared in 1872 and 1878 as an epizootic and swept over the United States and Canada. Since then it has not been nearly so prevalent.

SYMPTOMS.—One of the first symptoms noticed is a refusal of the animal to eat grain. This is on account of a high fever and it is not unusual to have the temperature reach from six to eight degrees above normal. The animal is dull, stands with head low, is very dumpish and acts as though suffering pain. He has chilly spells, the coat becomes dry and staring, the ears hang and the animal is indifferent about moving. The eyes are sometimes swollen and almost entirely closed, in some cases with tears dropping over the cheeks. The pulse ranges from sixty to one hundred beats per minute and the respirations are also quickened, the animal breathing from twenty to thirty times a minute. The animal always shows great muscular weakness and if required to move can scarcely walk. There seems to be a total loss of appetite for grain or stimulating food, but a disposition to eat hay and sometimes vegetables and generally there is a great thirst. Following high fever there is usually some stocking about the fetlocks, in sheath, and under belly and sometimes to an enormous extent. For the first three or four days the bowels are inclined to be costive. This is doubtless on account of the feverish condition of the body. Influenza, on account of its being attended with such high fever, may result in death from either lung or heart complications or brain congestion. As influenza is a specific epizootic fever of a low type, sometimes associated with inflammation of the respiratory organs and always causing an inflammation of the mucous membrane of these organs, it is absolutely necessary to give animals suffering with it good care and proper nursing. This ailment affects animals very much like La Grippe

affects man; therefore, the same line of treatment that is followed in human practice always proves beneficial to animals.

TREATMENT.—As costiveness always prevails in the early stages of this sickness it should be overcome by injections of warm water or by giving one-quarter or one-third of a full dose of raw linseed oil to move the bowels gently, but active cathartics must be avoided for if given they generally produce great harm. Experience tells me that animals which are forced to breathe bad air during the night and greater part of the day are more likely to take this disease. It would seem as though fresh air and comfortable clothing were an important and inexpensive remedy. Nobody will deny that influenza is a contagious disease; therefore, it is important to separate the sick from the well ones as soon as the first symptoms of the disease show, for by doing so its spreading may be prevented. Medical remedies given should support the system and assist nature to throw off the disease. Give two or three drams of chlorate of potash in drinking water three or four times a day; or, give a teaspoonful of powdered saltpeter at a dose in drinking water three or four times a day. Give the animal plenty of cold water and remember that chlorate of potash is one of the best remedies for influenza. In some cases baking soda given in water three times a day, a tablespoonful at a dose, has a good effect. When a stimulant is required give liq. acetate ammonia, two or three ounces at a dose, every three or four hours; or, give alcohol, whiskey or wine. In some cases give whiskey, eggs, and milk as a nutritious stimulant. If the throat is sore apply antiphlogistine or apply equal parts of turpentine, aqua ammonia and sweet oil lightly once a day. If the lungs are affected apply light applications of mustard and water or hot packs. Benefit may follow steaming the throat. In the convalescent stage give tonics, such as sulphate of iron, quinine, gentian, cinchona, quassia or cod liver oil and don't forget to groom the animal twice a day. In conclusion let me say that I have always found the treatment of influenza very satisfactory if taken in time, but if old horses are affected remember that their recovery will be much slower and not as satisfactory as in young animals.

STRANGLES OR DISTEMPER.—Strangles is an acute infectious and contagious febrile disease peculiar to the horse, mule and ass and is characterized usually by an abscess forming in some part of the body, but generally in the throat. This disease is most common in young horses. However, old horses sometimes have distemper. It is seldom that a horse has more than one attack. This ailment requires six or eight days to develop. Strange to say, when young horses are moved from one locality to another they are almost sure to become infected.

CAUSES.—Distemper is due to an organism, a streptococcus, making this a contagious disease. Very few public stables are free from distemper infection. However, this is not by any means a fatal illness.

SYMPTOMS.—The animal first appears dull and stupid, the eyes soon begin to water, the temperature begins to rise, the coat begins to get rough and there is generally a loss of appetite and some discharge from the nostrils. The throat usually swells and an abscess begins to form under the lower jaw, unless it is a case of irregular strangles; then an abscess may form in any other part of the body, making the case much more serious and difficult to treat successfully.

TREATMENT.—The treatment of strangles, as it generally occurs, is not difficult. Place the animal in a comfortable, clean, well-ventilated stable

in winter time, or turn him out to pasture in the summer. Fresh air and good care have much to do with bringing about a recovery. Poultice the throat or apply equal parts of turpentine, aqua ammonia and sweet oil to the swollen glands daily. Hot fomentations induce suppuration; so do all stimulating liniments. When the abscess softens it should be opened with a dull knife and near the lower part to allow proper drainage. Inject a little peroxide of hydrogen twice a day; ten minutes later inject one part of carbolic acid and thirty parts water; or one part coal tar disinfectant and twenty parts water; or any other good home healing remedy and the abscess will soon heal. If the animal has much fever give twenty drops of tincture of aconite five times a day. Feed a cooling laxative diet instead of much grain.

PEOPLE'S HOME REMEDIES.—For Strangles or Distemper.—

1. **Steaming.**—Fill a bucket with hay and bran and mix in some tar; over this pour hot water and steam the horses head with the vapor which arises. Belladonna leaves may be used in place of the tar if desired. This relieves the inflammation of the mucous membranes and eases the cough.

2. **Gentian, Resin, Ginger and Baking Soda.**—To half a pound of ground gentian add a pound each of resin, ginger and baking soda. Each should be powdered and the whole well mixed. The dose is a tablespoonful three times a day in feed, or given with a spoon.

3. **Salts, Soda or Nitre.**—Do not expose the horse to cold rainstorms and if there is much fever give one-half teacupful of Glauber's salts twice a day. Also give a tablespoonful of baking soda and a teaspoonful of nitre twice a day.

4. **Turpentine, Camphor, Olive Oil and Ammonia.**—To 4 ounces of olive oil add one ounce each of spirits of turpentine and spirits of camphor and one and a half ounces of aqua ammonia. Rub the throat with this liniment once a day. If the throat is swollen badly the application of a hot poultice of oil meal will give relief. It is also well to keep the bowels open with either raw linseed oil or salts.

5. **Distemper in Colts.**—Give from 4 to 6 ounces of epsom salts. Give warm bran mashes or linseed or oatmeal gruel. The colt should be kept warm and if the legs seem cold they should be rubbed with cloths dipped in hot mustard water.

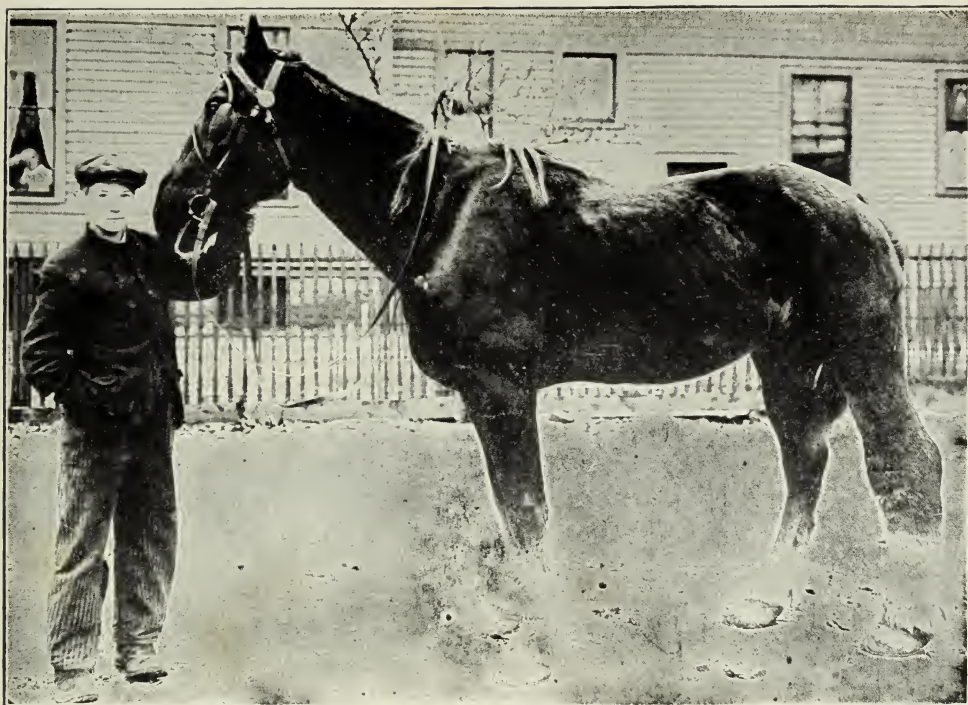
6. **Tobacco Tea.**—To a quart of water add an ounce of tobacco and boil to make a tea. Bathe the throat with this tea as hot as it can be borne.

7. **Salt peter, Etc.**—Mix equal parts of salt peter and chlorate of potash and give a teaspoonful on the tongue two or three times a day, or dissolve in water and let him drink it. At the beginning the hair should be clipped from the throat and twice a day a mixture of white wine vinegar and Spanish flies should be applied. Use one-fourth ounce of powdered Spanish flies to a quart of the vinegar. Keep this mixture in a warm place.

8. **Mustard and Pepper.**—Mix equal parts of mustard and cayenne pepper with enough water to make a thin paste and apply to the throat and under part of neck and chest. When the abscess softens it should be opened.

SHIPPING FEVER.—The term "shipping fever" is a common expression of horse dealers and means either influenza, strangles, catarrhal fever or sore throat. For further information the reader is referred to these subjects.

LYMPHANGITIS—WATER FARCY—WEED—BIG LEG—MONDAY MORNING DISEASE.—These ailments are all the same disease, but are known by different names. It consists in an inflammation of the lym-

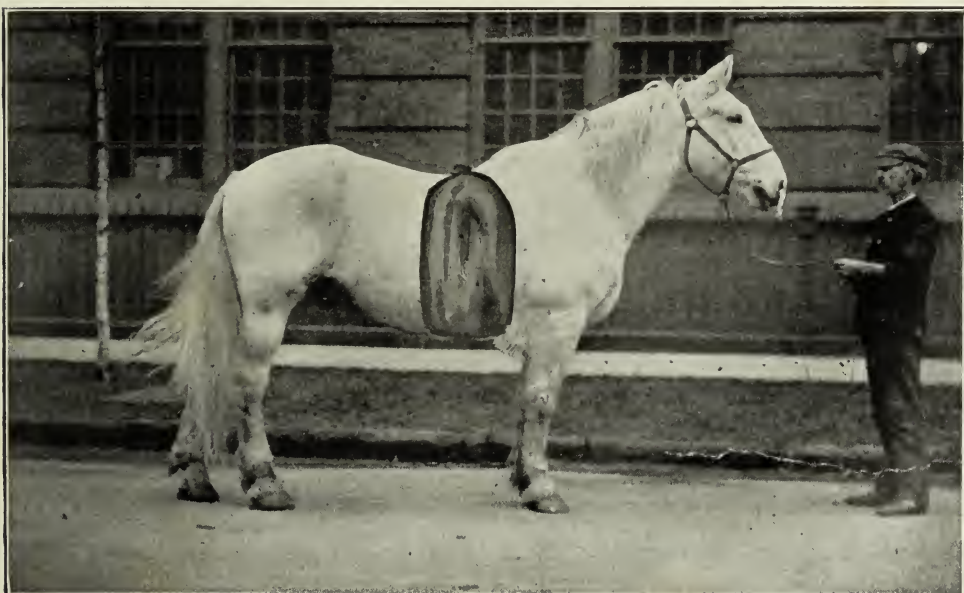


ELEPHANTIASIS.

(Also a collar gall.)

Elephantiasis is the result of neglected lymphangitis (water farcy or weed). The leg of this six-year-old horse measured thirty inches in circumference. Also note collar gall on shoulder.

(Photographed at Dr. Fair's Veterinary Hospital especially for this book.)



NASAL GLEET AND MANNER OF POULTICING LUNGS IN LUNG TROUBLES.

As a horse with lung trouble always stands up the poultice is easily kept in place.

(Photographed at Dr. Fair's Veterinary Hospital especially for this book.)

phatic glands and vessels, usually affecting the extremities of the horse and generally one leg only, which becomes enlarged. The heaviest breeds of horses are predisposed to lymphangitis much more than the lighter breeds and it generally affects good feeders.

CAUSES.—As I have stated, the heavy, fleshy horse is the most likely to become affected. However, the disease may occur in the light thoroughbred horse. A common cause is resting a hard working animal for a few days and feeding him as much or more grain than he would have been given had he been working. When a horse rests, especially if he is a draft horse, his grain supply should be reduced one-half or more, his bowels should be kept open and his stable well ventilated. Another cause is an injury, either making a wound or bruising the lymphatic glands. It also follows debilitating diseases but it usually follows high feeding and no exercise.

SYMPTOMS.—The disease sets in with rigors which are sometimes severe, the animal trembling violently. The mouth is hot, breathing is quick, temperature goes up, the horse soon becomes lame and in some cases the animal lies down and is unable to get up without assistance. The symptoms of lymphangitis are all very plain and should be readily recognized by any one who understands horses.

TREATMENT.—The treatment of lymphangitis should be energetic but careful and, although this treatment is not popular nowadays, I have obtained good results from blood-letting and giving a full dose of cathartic medicine, such as aloes, from five to eight drams, with thirty grains of calomel in two drams of ginger and made into a bolus and given at one dose. Or, give one quart of raw linseed oil. Give one-half ounce doses of powdered saltpeter night and morning or give one-half ounce of citrate of potash twice daily. Foment leg with hot water, do not feed grain, gently hand rub the leg and soon give walking exercise. Never apply hot, irritating liniments or blisters; use hot water.

PEOPLE'S HOME REMEDIES FOR WATER FARCY.—

1. **For Farcy Caused by Indigestion and Run Down Condition.**—Mix 3 ounces each of saltpeter, sulphur, anise seed and cream of tartar. Divide into 12 powders and give in soft feed for 12 consecutive meals.

2. **Oxide of Zinc.**—Apply zinc ointment which is made by adding a dram of oxide of zinc to an ounce of vaseline.

3. **Sugar of Lead.**—Bathe the parts freely with a solution of one ounce of sugar of lead to a quart of water. Keep the bowels open.

GOITRE—BRONCHOCELE—ENLARGEMENT OF THE THYROID GLAND.—This is an enlargement of the thyroid gland situated on each side of the neck about 6 or 7 inches from the angle of the lower jaw. Although this is one of the oldest diseases known it is by no means well understood. It is epidemic in all mountainous districts the world over and is very prevalent in a belt of country extending from Quebec, Canada, to Duluth, Minnesota. It is also very prevalent in Michigan and certain other parts of the United States.

TREATMENT.—Iodine seems to be a specific for this ailment and may be applied externally or given inwardly. I have obtained good results by injecting some iodine into the gland or by applying iodine ointment or tincture of iodine to the gland daily or by giving dram doses of iodide of potassium or even larger doses twice a day until the gland reduces. In obstinate cases increase the dose or apply red iodide of mercury, one part; iodine, one

part and lard, eight parts. There are also other remedies which have given me fairly good results.

WEAKNESS IN LEGS OF FOALS.—This is a very common ailment of foals and is no doubt the result of their mothers having had improper care or having been over worked and not fed sufficient nutritious food or having stood still without exercise in a foul, badly ventilated stable. Or, she may have been supplied with altogether too much nutritious fat-producing food without enough exercise. I find mares that are fed on an unbalanced ration and that are kept in badly ventilated barns are inclined to have weak colts. Besides, mares that are not exercised enough up to foaling time grow weak themselves and are quite likely to have weak foals. Another very common cause of weakness in foals is want of proper nourishment after they are born; also, neglecting the treatment of navels and allowing them to become infected, thus causing fever and considerable weakness. This, of course, shows in the body, but perhaps not so much so to the casual observer as the weakness in the legs, which everybody can see plainly.

TREATMENT.—Colts should be kept warm when they are born, dried promptly, either by care from the mother or by clothing or rubbing them with soft towels and you should never let a colt or any young animal chill. The navel of every colt should be treated for safety. Apply any good healing remedy such as one part carbolic acid and fifty parts water, one part bi-chloride mercury and 1,000 parts water, or dust on some boric acid powder or apply peroxide of hydrogen, then apply iodoform or some coal-tar disinfectant, one part to twenty of water, and continue applying remedies until the navel dries and heals perfectly. The udder of a mare should be washed clean and if soap and water are used all the soap should be washed off with warm water before the colt is allowed to suck. If her first milk does not prove laxative use a little glycerine, sweet oil or soap to lubricate the inside of the rectum. Proper food supply and good care are what they need—not liniments.

TUMORS.—Tumors are unnatural enlargements situated in different parts of the body and they very often differ in their nature and structure. The tendency of some are to continue growing while others reach a certain point of development, then cease to grow. The removal of tumors should be done in one of two ways—either by a surgical operation, or by applying iodine or giving different preparations of iodine internally, thus causing their absorption. Apply either tincture of iodine or iodine ointment. Give iodide of potassium or syrup of iodide of iron daily, until the bunch is reduced.

RICKETS.—Rickets occur in all lower animals but perhaps the puppy is the most often affected. This disease is generally brought on by feeding an unbalanced ration.

CAUSES.—The colts from sires that have been over taxed seem to be more susceptible to rickets than any others. Weaning young animals too soon, feeding food which is unlike milk in nutritive properties and forcing quite young animals to live on food such as old ones eat, are common causes of rickets. The young animals cannot digest food that older ones do; consequently, they are weak and the bones may bend.

SYMPTOMS.—The bones bend on account of their containing too much animal and not enough earthy matter. There is generally considerable weakness. This accounts for much of the unsoundness of young stock.

TREATMENT.—In the treatment of rickets the cause should be found and removed if possible. If the animal is still sucking, then its mother is at

fault and by changing her feed the colt will soon get better. Feed the mother a balanced ration, keep her in good health and never wean young animals until they have learned to eat and, when weaned, feed them a mixed diet with some milk. Lime is usually the best remedy and if the bowels are too costive give either sweet oil, castor oil or raw linseed oil. The weak legs should be supported with bandages and, sometimes, splints. I have obtained good results by giving cod liver oil and syrup of phosphates. However, the most important thing to study is the food supply. When the animal is weak, keep it on smooth footing.

OSTEO-POROSIS—BIG HEAD.—This is a disease that usually attacks colts before they are four years old. However, it does affect older horses. It generally develops without showing much soreness. The bones of the head are the most likely to become affected.

CAUSES.—While the cause is not well understood, the disease seems to appear when colts run on pasture lands which are deficient in the salts or lime and when stock run on low swamp lands and eat grass which grows in the shade and lacks nutritive qualities.

SYMPTOMS.—Without any warning the bones of the head commence to enlarge and grow soft and if the bones of other parts of the body become affected the ligaments or muscles may lose their attachment and pull off. In many cases the colt shows lameness which is generally diagnosed as rheumatism. However, if a careful examination had been made the real cause would have been learned.

TREATMENT.—There must be some fault in the assimilation of food or the quality of food furnished the animal; or, it may depend on the kind of place in which the animals are stabled. Basements that are damp and dark seem to favor its development. The best results follow good care, proper feeding, good grooming, giving plenty of vegetables or pasturing on high ground. Give tonics such as iron, cinchona, gentian, fenugreek, nux vomica, cod liver oil and phosphate of iron. No treatment will help advanced cases. External applications never do any good unless they are applied very early.

GLANDERS, OR FARCY.—Glanders is a malignant disease of an infectious and contagious character and is caused by the spread of a specific organism, the bacillus mallei. The lymphatic glands are generally affected and it usually affects the air passages. It is well to keep in mind that farcy is the same disease as glanders but is generally seen on the surface of the body. It is an incurable disease and a very loathsome one, affecting men as well as sheep, goats, dogs, cats, mice and rats; but cattle never take it. The disease has existed two thousand years or more. A remedy has never been found that seems to cure it. However, we are pleased to know that it is not nearly so prevalent as it was many years ago.

CAUSES.—Some of our ancient writers claim the disease can have a spontaneous origin, but this is nonsense for there is only one cause and that is the presence of the germ, bacillus mallei. I have met with many a case of genuine glanders where I was unable to trace the contagion but the animal must have become inoculated with the virus. Any animal in a weakened condition will contract the disease much more readily than if strong and well. Stabling too many horses in poorly ventilated stables helps spread it if a diseased one be amongst them. I have known a horse to work a year with a horse that had glanders and not become diseased, but remember that this is an exception. No matter in what way the virus enters the body it may infect

another. An acute case is much more contagious than a chronic one. The period of incubation is from four to eight days but chronic glanders may break out at any time within ten or twelve months. I have often found cases of glanders where gypsies have "swapped" horses and where horse traders have operated, shipping horses into the country from large cities.

SYMPTOMS.—In chronic glanders there may be no clinical symptoms that will lead you to decide that the horse has glanders. However, if you are at all suspicious and know of his having been subjected to the contagion the "mallein" test should be applied for this will pretty correctly determine whether or not he has glanders. It can be safely said that glanders is the most insidious disease that the horse is heir to for he may have it for years and not show it, the virus remaining latent in the system ready to show itself under favorable conditions. The disease is usually ushered in with a chill, the temperature goes up and sometimes the disease assumes an acute form. Some time later a slight discharge comes from one nostril, perhaps more often from the right nostril than from the left. This discharge is rather greenish at first, soon changing to yellow. It is very often highly charged with albumen which accounts for its sinking readily in water. Sometimes the horse coughs; his coat becomes dry; the mucous membrane of the nose is covered with pimples which point, open and remain sore, healing slowly and always leaving a scar. The glands of the body are affected but more especially at the angle of the jaw and in many cases they seem to cling to the bone and have a peculiar feeling to the touch. The mallein test can always be depended upon for I have never known it to fail even in cases where post-mortem showed quite slight lesions. In cases of farcy it acts equally well. There is, as I have said before, no difference between glanders and farcy only in the manner in which the disease manifests itself, affecting different parts of the body.

THE MALLEIN TEST.—Ascertain the normal temperature of the horse; clean and disinfect a selected spot on the neck or shoulder; then inject from 15 to 20 minims of mallein under the skin. Commence taking the temperature six hours later, taking it every two hours until the twentieth hour. If the temperature rises from two to six degrees above normal, then you may safely decide that the horse has glanders. The normal temperature is one hundred and one-fifth degrees, Fahrenheit.

TREATMENT.—There is no remedy for glanders.

POST-MORTEM.—We find ulcers in the nose generally high up and the bones may be diseased with the septum nasi, or wall between the nostrils, almost gone. Sometimes there are ulcers in the throat and windpipe and shiny nodules in the lungs. Just a word of caution: working around a glandered horse is dangerous; cutting up one that died or was killed because he had glanders is dangerous work. Therefore, you are warned to be very careful if you have sores on the hands. The body of the horse should be burned or buried under the ground to prevent contagion. The stable should be thoroughly disinfected.

RHEUMATISM—SHIFTING LAMENESS.—Rheumatism is a disease which affects both the muscles and joints of the body and very often shifts from one part to another.

CAUSE.—Rheumatism of the muscles is generally the result of exposure when in an exhausted or heated condition, while rheumatism of the joints is due to some micro-organism in the blood, which is deposited in or around the joints. Certain animals seem to inherit a predisposition to rheumatic ail-

ments. Disorders of the digestive or respiratory organs and the kidneys have no doubt something to do with the system's becoming loaded with abnormal and probably acid elements which may give rise to pain in the muscles, tendons, joints and bursa. Following many germ ailments it is not unusual to have the joints inflamed and the inflammation shift from one joint to another.

SYMPTOMS.—A shifting lameness passing from one joint to another indicates a rheumatic ailment. The joints affected are not always swollen. The animal is slightly feverish with a quick pulse and the affected parts very seldom suppurate. Sometimes, when the muscles are affected they contract, producing pain and causing the animal to travel with a peculiar gait. When the joints are affected the animal suffers considerable pain and shows great lameness, while if the muscles are affected it produces stiffness.

TREATMENT.—The animal should be placed in a comfortable, dry stable that is well ventilated but warm, and the body should be clothed properly. Give at one dose from five to eight drams of aloes, twenty grains of calomel and two drams of ginger, made into a bolus. This will open the bowels. Or, give eight or ten ounces of epsom salts or a pint or more of raw linseed oil at a dose daily until the bowels move rather freely and feed well salted bran mash or vegetables to keep the bowels open. Give one dram of iodide of potassium at a dose two or three times a day, or a tablespoonful of powdered saltpeter two or three times a day, or a tablespoonful of salicylate of soda at a dose two or three times a day. Or, give one dram of powdered colchicum, or fluid extract will do, and one dram salicylic acid or three drams of powdered nitrate of potash at a dose three times a day. Apply mustard and water or some good home liniment to inflamed muscles or joints twice a day.

RHEUMATISM IN COLTS—LEAKING OF THE NAVEL—SWOLLEN JOINTS.—The navel of a young colt should never be allowed to leak after birth and should always be treated for fear of germs entering the body through this channel, bringing on rheumatism and swollen joints. When the navel leaks blood apply Monsell's solution of iron or adrenalin or tie the cord with silk or take a stitch around the leaking blood vessel. If it leaks water, apply astringents such as powdered alum, one ounce, and sugar of lead, one ounce, dissolved in a pint of water. Apply this solution to navel three or four times a day, also dust on equal parts of iodoform, boric acid, powdered alum and tannic acid; or, apply one part coal tar disinfectant and fifteen parts water or one part coal tar disinfectant and four parts vaseline. When the joints of a colt only swell do not apply blisters nor open them, for if you do it will generally result in death or the colt will be ruined. Apply equal parts of extract of witch hazel, alcohol and water. Take good care of the mare, feed her properly, keep her udder clean and continue treating the navel of the colt. Also avoid tight bandages, for when applied to the tender legs of a colt, especially in hot weather, they are likely to do harm. Kindly understand the importance of not interfering too much with nature for young colts usually outgrow ailments of this kind. When pus forms in the joint as it sometimes does, open and allow proper drainage and apply weak antiseptic healing remedies, protecting the parts from filth and flies.

IMPURE BLOOD—BAD BLOOD.—This is an abnormal condition of the blood brought on by a variety of causes such as would result from exposure and a limited supply of poor food or badly cured fodder or by feeding too much nutritious food without the animal's having sufficient fresh air and

exercise; besides, it often occurs when animals are kept in damp, filthy, basement stables and are not kept clean.

SYMPTOMS.—An unthrifty condition; rough coat; scaly condition of the skin, very often with pimples; stocking of the legs and dullness of the animal with weakness are the general symptoms of bad blood. However, highly fed horses with skin eruptions may have impure blood.

TREATMENT.—If the horse is very fat, give a purgative of aloes or epsom salts or raw linseed oil and cut down his food supply. Give a teaspoonful of powdered saltpeter, two tablespoonfuls of baking soda and two tablespoonfuls of powdered wood charcoal at a dose in feed two or three times a day. If occurring in the summer, turn the horse to grass but if occurring in the winter, salt him well, give mixed hay, well cured corn fodder and also plenty of grain and vegetables. It is also important to groom him well and give him daily exercise. Nearly all animals that suffer from febrile diseases are likely to have impure blood. The treatment I have prescribed for chronic indigestion will help cases of this kind.

PEOPLE'S HOME RECEIPTS FOR CONDITION POWDERS.—

1. **Tonic and Blood Purifier.**—Take an ounce each of buchu leaves, digitalis leaves, skunk cabbage root, cream of tartar, epsom salts, black antimony, fenugreek seed and carbonate of iron; two ounces each of bark of the root of sassafras, elecampane root, gentian root, ginger root, rosin and saltpeter and six ounces of sulphur. Directions.—Each should be finely pulverized and the whole should be thoroughly mixed and kept in air-tight boxes. Give a tablespoonful twice a day in bran mash for two weeks.

2. **Relaxing Condition Powder for Use in Scratches, Grease Heel, Etc.**—Take 2 ounces each of mandrake, gentian, epsom salts, skunk cabbage, blood root, golden seal, and stillingia; four ounces each of licorice root, sulphur, coriander seeds and ginger root; 3 ounces each of lobelia and nitre and 4 ounces of powdered copperas. These should be powdered and mixed thoroughly. The dose is a tablespoonful daily in feed. A pint of sassafras tea daily will aid the action of this condition powder.

3. **Condition Powder.**—Take 1 ounce of tartar emetic, 2 ounces each of gentian root, epsom salts and juniper berries and 3 ounces each of fenugreek, elecampane and ginger. Powder and mix thoroughly and give a tablespoonful in bran mash twice a day.

4. **Condition Powder for Run Down Horses.**—Add one-half part of cayenne pepper to one part each of cream of tartar, gentian, fenugreek, saltpeter, sulphur, black antimony, rosin and ginger. Mix thoroughly and give a tablespoonful once a day in bran.

5. **Condition Powder for Purifying the Blood, Removing Worms and Cleansing the Stomach and Bowels.**—Pulverize and mix thoroughly equal parts of sulphur, rosin, cream of tartar, saltpeter, ginger, poplar bark, copperas, blood root, buchu, fenugreek and senna. The dose is a tablespoonful in feed once or twice a day.

6. **Condition Powder for Stallions.**—Take 4 ounces each of madder and white rosin; 3 ounces each of gentian root, black antimony, fenugreek seed, ginger root and sulphur, 2 ounces of anise seed and one ounce of Spanish flies. Each should be finely powdered and the whole should be thoroughly mixed. Toward the end of the season give the stallion a slightly rounding tablespoonful in his morning feed.

7. **Blood Purifier.**—Mix equal parts of sulphur, sassafras, powder of mandrake and cream of tartar and give a tablespoonful in the grain once a day.

PERICARDITIS.—(See “Cattle Department.”)

PLETHORA.—(See “Cattle Department.”)

ANEMIA.—(See “Cattle Department.”)

PURPURA HEMORRHAGICA.—(See “Cattle Department.”)

BLOOD POISONING — PYÆMIA — SEPTICÆMIA.—(See “Cattle Department.”)

INFLAMMATION OF THE VEINS—PHLEBITIS.—(See “Cattle Department.”)

BLEEDING—BLOOD LETTING.—(See “Cattle Department.”)

DISEASES OF THE SPLEEN.—(See “Cattle Department.”)

TAPPING THE CHEST.—(See “Cattle Department.”)

CATTLE.

Anatomy of Cattle, General Symptoms of Disease, Action of Drugs, How To Give Medicine, Etc.

ANATOMY OF CATTLE.—The bones and joints of the ox are known by the same names as those of the horse; however, there is some difference in their skeletons. The ox has only thirteen pairs of ribs while the horse has eighteen pairs. The horse has a rounder breast bone than the ox. The ribs of the ox are united to the breast bone by joints while the horse's ribs are united by cartilage. Because of the difference in the construction of the chest the horse has more breathing space when standing up and the cow when lying down. This is why the horse stands up and the cow lies down when suffering from pneumonia or other lung diseases. The head of the horse is narrower, especially the upper part. The skull of the ox has two bony projections, one on each side, which extend into the horns and are hollow. The ox has two small cardiac bones (heart bones) and the horse has none. The ox has a divided foot while the horse has not and of course the bones are different.

THE DIGESTIVE ORGANS.—

THE UPPER LIP of the ox is thick and hairless and when the animal is healthy and free from fever the smooth part should be moist.

THE CHEEKS on the inside are covered with numerous little tufts which give them a rather peculiar appearance.

THE TONGUE of the ox is rough on its upper surface and thicker at its base than that of the horse. It is used to pull food into the mouth.

THE SALIVARY GLANDS are not unlike those of the horse and of course perform the same function.

THE TEETH of the ox and horse differ very much. The ox has no front teeth in the upper jaw, their place being filled by a pad of hard tissue. The lower row of teeth, when grazing, press against this pad, therefore it serves almost the same purpose as the teeth would; however, it is a mistake to believe that cattle can thrive on as short pasture as horses or sheep. There are eight teeth in the lower jaw and the molars (grinders) are similar to those of the horse but smaller and rougher on their surfaces. The ox has thirty-two teeth, eight in front and twenty-four back.

THE SOFT PALATE.—In the ox this is small and does not close the opening from the mouth to the pharynx and in this respect it differs from the same organ in the horse.

THE PHARYNX AND GULLET.—In the ox the pharynx is considerably larger than in the horse. The oesophagus or gullet, which conveys the food to the stomach, is unusually well developed. The fibers in the gullet have a sort of double action and when the animal is eating it carries the food from the mouth to the stomach but when the animal is chewing the cud (ruminating) the fibres act in the opposite way and the gullet then conveys the food from the stomach to the mouth and of course returns it to the stomach when masticated.



DR. FAIR DRENCHING AN UNRULY COW.

(Photographed at Dr. Fair's Veterinary Hospital especially for this book.)

THE STOMACH.—The stomach of the ox is a very important organ and has a capacity of from 50 to 65 gallons and has four compartments. The first is called the rumen or paunch; the second is called the reticulum and presents a honey-comb appearance; the third is called the omasum or manyplies; and the fourth is called the true stomach or abomasum. The real process of digestion is carried on mostly in the fourth compartment; however, the first three play an important part in the preparation of the food for the fourth or true stomach. The rumen, or paunch, occupies about three-quarters of the belly cavity and is attached to the left side by ligaments and thus held in position. It is important for the reader to remember the position of the paunch for many times it is necessary to tap cattle for hoven (bloating). It should always be done on the left side and into the rumen. This compartment has two openings, one for the food to enter and the other for its exit; both of these openings are in the front side, the food passing from here into the reticulum. In this compartment the entrance is in front and the exit in the back part. The function of this organ is to help in the preparation of food for its return to the mouth for remastication. From the reticulum the food passes into the omasum, which is situated on the right side of the paunch. The food, passing from here, goes into the true stomach to be digested and from here the food passes along into the small intestines.

THE INTESTINES OR BOWELS.—There are both large and small intestines, being very similar in structure and action to those of the horse. When the food is passed into the small intestines it is acted on by the bile, which is secreted by the liver, and also by the pancreatic fluid that comes from the pancreas. These juices are emptied into the first part of the intestines through little tubes, much the same as in the horse. Throughout the bowels there are situated in the coats small villi which pick up the nourishment and carry it to the blood, the balance of the food passing out in the form of manure. The bowels of the horse are smaller than those of the ox and shorter, the ox having about 150 feet. The large bowels of the ox are very much smaller than those of the horse and are about 35 feet long. The bowels of the ox are much less liable to become diseased than those of the horse.

THE LIVER AND GALL BLADDER.—The liver of the ox has a large gall bladder, much the shape of a pear, to store up gall when digestion is not going on; but when digestion is going on the gall bladder contracts, forcing the bile into the intestines.

THE PANCREAS.—The pancreas of the ox is very similar to that of the horse in appearance and its function is much the same.

THE SPLEEN.—The spleen of the ox is oblong and attached to the paunch and is somewhat different in shape from that of the horse.

THE RESPIRATORY ORGANS.—The respiratory organs of the ox are much the same as in the horse and are not nearly so liable to disease and, with the exception of tuberculosis affecting the lungs and throat of the ox, his air passages do not as a rule give him much trouble if he has good care.

THE URINARY ORGANS.—The kidneys of the ox are larger than those of the horse and are not nearly so smooth. The bladder and passage for urine are much the same as in the horse but where the urethra opens into the vulva it is different, which makes it more difficult to draw off the water; a little depression at the opening causes the trouble.

THE PULSE.—The normal number of heart beats is from forty-eight

to fifty-six per minute; however, in calves and old animals the pulse is generally faster. The most convenient place to take the pulse is on the under-border of the lower jaw and in health the beat is generally softer than it is in the horse. The artery should be dropped in gently between the first and second finger, but the thumb should not be used for fear of counting the pulsation in your own artery.

THE RESPIRATION.—In health this will usually run from eleven to eighteen or twenty per minute and is easily counted by watching the nostrils, flanks, or the heaving of the chest. Considerable practice is required to do chest sounding; however, in health the passage of air through the air passages should be smooth and uninterrupted, while in disease of the lungs or bronchial tubes the breathing is obstructed.

THE TEMPERATURE.—The temperature in cattle is a great guide in ascertaining if they are in a normal condition and every dairyman should be equipped with a clinical thermometer which holds the registration until shook down. The thermometer is usually inserted in the rectum and left there two or three minutes. The normal temperature in cattle is considered to be 101 degrees; however, I must place it at $101\frac{1}{2}$, for after taking the temperature of thousands of cattle that were perfectly healthy, their temperature registered nearer $101\frac{1}{2}$ degrees. The temperature of the horse when in perfect health is nearer $100\frac{1}{2}$ than any other point. Whenever the temperature goes much above the normal point the animal is considered feverish.

GENERAL SYMPTOMS OF DISEASE.—A dry, harsh, staring coat is one of the leading symptoms of an animal's being out of condition or suffering from disease. Also, if the animal shivers when not exposed to cold it is another symptom that should be regarded with fear. Whenever cattle break out in a cold sweat after having been ill for some time it is a bad symptom. The muzzle when not covered with moisture indicates fever. Another symptom of constitutional disturbance is the animal's ceasing to chew the cud and when this occurs in milch cows their milk supply usually falls off quickly. Whenever the bowels are inclined to be too costive or too loose and this condition continues for some time it always proves difficult to correct. A cough is usually a symptom of disease, especially if it becomes chronic, therefore an effort should be made to relieve it for, if neglected as it many times is, it usually runs on until it becomes incurable.

ACTION OF DRUGS IN CATTLE.—It is well to keep in mind that certain remedies or drugs which act nicely in cattle are entirely unsuitable for horses, even if they are suffering from the same ailment. As a rule it is good practice to drench cattle slowly and dilute the drugs well, on account of the quantity of food in the stomach of cattle. By giving the drench slowly its chances are better for reaching the fourth stomach where it should go; besides, I have always found it good practice to give cattle larger doses than horses. Many times they require twice as much. The common purgative for cattle is epsom salts (sulphate magnesia) but never add much, if any, calomel for cattle are easily salivated; besides, the mercury is excreted through the milk and will affect calves or people who use it. Aloes is an excellent cathartic for horses but is not fit for cattle. Also, oils will purge cattle but their action is quite uncertain and better results are obtained by giving lard. Turpentine is less active when applied to cattle than to horses but mustard appears to act with more certainty on cattle than when applied to horses.

Many of the drugs that are made from herbs do not affect cattle the same as they do horses.

GIVING MEDICINE TO CATTLE.—Cattle are much more easily drenched than horses. Tie the animal short, stand to the left side, place the thumb and finger in the nostrils, put the nozzle of the bottle into the mouth and the medicine will run down into the stomach quickly, but of course the nose should be held high enough to form an incline for the liquid to run into the back portion of the mouth. Placing a ring in the nose and elevating it makes the work easier. A great many kinds of medicine can be given in the feed or water without the need of drenching.

DISEASES OF THE DIGESTIVE ORGANS.

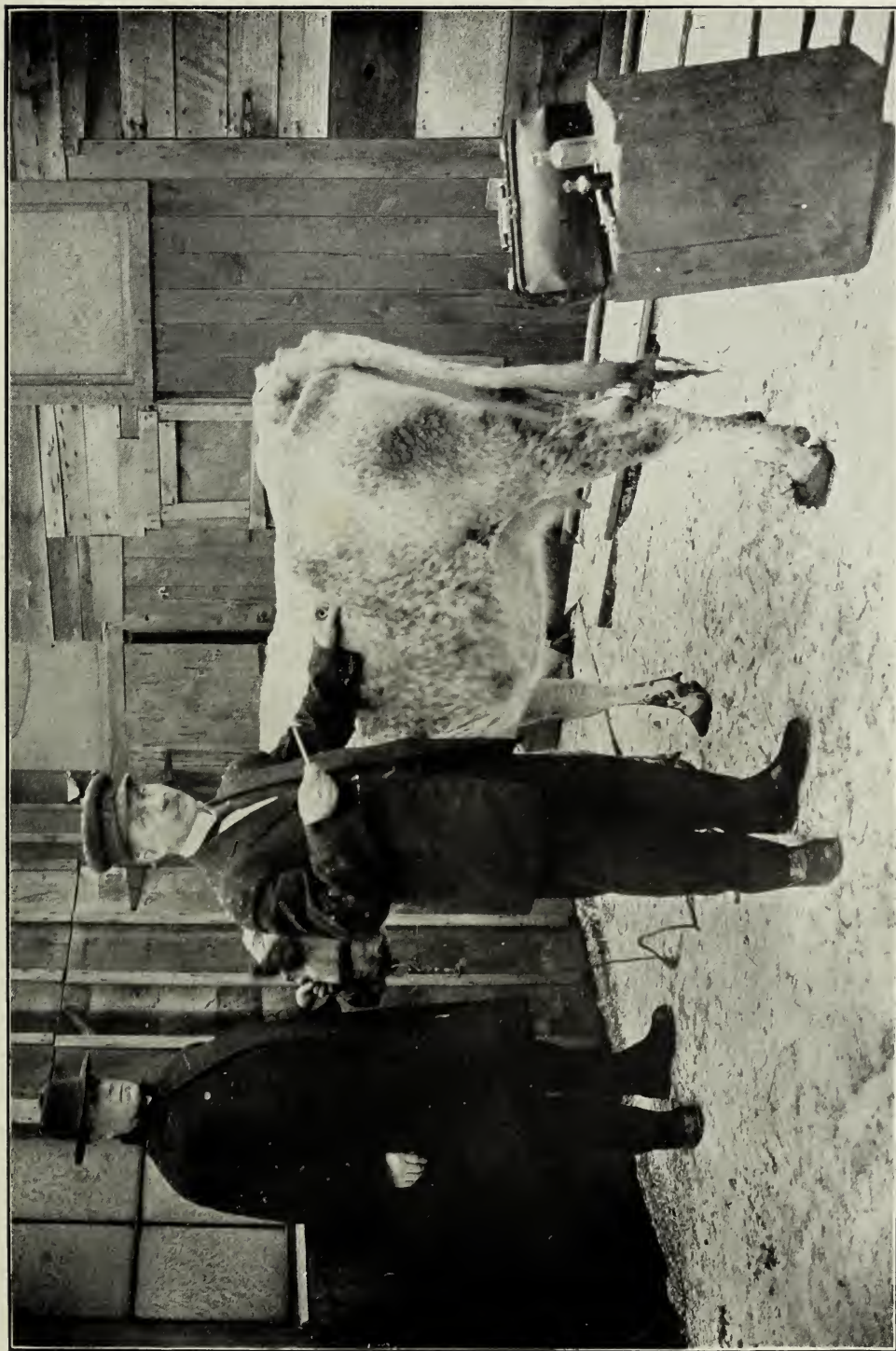
(Including Bloat, Impaction, Indigestion, Scours, Dysentery, Constipation, Inflammation of the Bowels, Cornstalk Disease, Worms, Rupture, Sore Mouth, Diseases of the Liver, Choking, etc.)

BLOAT—HOVEN—TYMPANITIS.—This disease is characterized by the distention of the paunch or rumen and is the result of fermenting food, or it often follows choking.

CAUSES.—Bloating very often follows choking and I have known it to come on very suddenly from this cause and to go down almost as quickly after the obstruction was removed. It also follows acute indigestion, especially where thin hungry animals are turned into luxuriant pasture lots where they eat far too much wet clover or frozen vegetables to which they have not been accustomed. Some cattle bloat from eating alfalfa hay.

SYMPTOMS.—The animal usually exhibits some pain, breathes quick and the abdomen is very much enlarged and the left flank more than the right. By tapping the end of the fingers on the left flank a drum-like sound can be heard. The animal exhibits distress and shows it by expression and generally moves about slowly. In bad cases you will find that when the flank is pressed in and the pressure taken off suddenly the parts fly back into place quickly. I have known cases of rupture of the stomach caused from the rapid formation of gas; therefore, when the symptoms are at all alarming prompt measures should be taken to relieve the animal.

TREATMENT.—In every severe case where the life of the animal is threatened tapping should be resorted to at once for there is but little danger from this operation. In mild cases it is not always necessary to give any medicine, but in acute cases the treatment should be prompt. If the bloat is great and the left flank drum-like the gas should be liberated at once and this is best done by puncturing the paunch. Before puncturing, the left flank should be washed off with soap and water and then wet with one part carbolic acid and thirty parts water. Cut through the skin and push the trocar into the paunch in a downward direction, pulling out the trocar and leaving the canula in for the gas to pass through. If you have no other suitable instrument use a common pointed knife, which answers very well and is not attended with much risk. When the case demands puncturing, open the flank about a hand-span from the last rib and lumbar vertebra and if a knife is used instead of a trocar and canula use a quill or tube to allow the gas to pass through. If it becomes necessary to puncture the animal a second time you had better make a new opening. When a remedy would seemingly correct this trouble give one-half ounce salicylic acid in a pint of hot water and, if this gives no relief, in fifteen minutes give another dose, repeating the doses every fifteen minutes until relief is obtained. Or, give one ounce aromatic spirits of ammonia, one dram fluid extract caliber bean and three ounces hypo-sulphite of soda, in a pint of water; and, if necessary, repeat the dose in thirty minutes. If you have neither of the above remedies give one ounce ginger, two ounces whiskey and one-half ounce of turpentine in a pint



DR. FAIR TAPPING A COW FOR HOVEN OR BLOAT.

Be sure to tap a cow in the left flank and a horse in the right flank.

(Photographed especially for this book.)

of sweet oil or raw linseed oil. In some cases relief will be obtained by keeping the mouth open with a block of wood. After puncturing cattle I always give them a full dose of epsom salts, which is from one to two pounds, with a tablespoonful or two of ginger in three or four pints of water. (See "Tapping the Paunch or Rumen.")

PEOPLE'S HOME REMEDIES FOR BLOATING.—

1. **Tapping.**—With a small-bladed knife tap the cow's paunch and insert a clean pipe stem or goose quill to allow the escape of the gas. The cow should be tapped where the bloating is most prominent which is generally in the triangle of the left flank, midway between the last rib and the point of the hip bone.

2. **Bitting.**—Take a piece of broom handle six or eight inches long and use it in the mouth as a bit. This may be held in place by tying a cord to one end, bringing it up over the head back of the horns and then tying to the other end of the bit. This holds the mouth open and allows the gas to escape. If used in time this is an effective remedy. If they are too far gone, tapping the flank may be necessary.

3. **Camphor.**—Drench the cow with two tablespoonfuls of camphor mixed with a pint of water and repeat in 30 minutes if necessary.

4. **Cold Water.**—Fasten the cow securely and then continue to dash cold water on the back and sides for fifteen or twenty minutes. If not relieved, tapping will have to be resorted to.

5. **Ginger and Soda.**—Add two ounces of powdered wood charcoal and two ounces of tincture of ginger to a quart of warm water and give as a drench.

6. **Charcoal.**—Mix half a teacupful of powdered charcoal with a quart of warm water and give as a drench. Charcoal aids digestion and at the same time absorbs large quantities of gas, two things which are much to be desired in case of bloating. If you have no wood to make charcoal yourself, keep it on hand for it can be bought at any drug store and costs but little.

TAPPING THE PAUNCH OR RUMEN.—This is an operation performed on cattle to relieve bloat when drugs fail to give relief. After washing the flank with carbolic acid and water, one part to thirty, or one part coal-tar disinfectant and thirty parts water, insert the trocar into the left flank, selecting the center of the triangle formed by the last rib, the point of the hip and the transverse process of the lumbar vertebra and at the most bloated or prominent point direct the instrument obliquely downward and inward and you will not fail to tap the paunch. Pull out the trocar and leave the canula in until the bloat goes down. If it is a bad case of bloat and you have not the proper instruments, do not hesitate to plunge a knife into the left flank, using a goose quill or tube for the gas to pass through, for it is not a dangerous operation. (See "Hoven or Bloat.")

IMPACTION OF THE PAUNCH OR RUMEN.—Impaction is where the paunch is wedged so full of food that it causes a sort of paralysis and loss of function of the stomach.

CAUSES.—It is caused by eating too much straw or bulky food that lacks moisture and by eating large quantities of grain when the animal has not been accustomed to it.

SYMPTOMS.—In milch cows the milk flow almost ceases, the animal breathes with a grunt and there may be bloating. By pressing the hand on the left flank a dent when made is slow to fill out and by tapping over the

paunch a dull sound is made. The bowels are usually costive and the passages are dry and give off a disagreeable odor.

TREATMENT.—Give from one to two pounds of epsom salts, one ounce of ground ginger and one-half ounce of laudanum in three quarts of warm water as a drench and, if the bowels do not move in twelve hours, give one quart of raw linseed oil or give three-fourths of a pound of epsom salts. It is also good practice to give a few quarts of warm water every two hours as this assists in softening the contents of the stomach. Also give one ounce of aromatic spirits of ammonia and one dram of fluid extract of nux vomica in a pint of cold water every four hours until the bowels move. In cases where there is much pain give four or five grains of morphine every six hours. In extreme cases I have obtained good results by giving one dram of croton oil and two drams of fluid extract of nux vomica in a quart of raw linseed oil. When these remedies fail the operation of rumenotomy should be performed. This treatment consists in opening the left flank and removing the contents by hand. This is not by any means a dangerous operation and is one that I never hesitate to perform when I believe the animal is in danger of dying. After the cow has been cast and rolled on her right side, the left flank washed clean and the hair clipped off short, apply one part carbolic acid to thirty parts water, or one part of coal-tar disinfectant and twenty parts of water. Then cut into the left flank in the triangle where the paunch lies close to the muscles. The opening must be made large enough to admit the hand. The edges of the stomach should be secured with strings to hold it up to the wound and after the stomach is emptied the paunch should be stitched with catgut; then stitch up the wound with silk and apply equal parts iodoform, powdered alum and boric acid; or, you may use any home remedy, such as coal-tar disinfectant or carbolic acid. (See "Rumenotomy.")

RUMENOTOMY.—This is an operation made through the left flank into the paunch, whereby a portion of its contents is removed through the side, but of course this should never be done unless the stomach is badly overloaded and distended. Tie the animal securely to a post or place it in a stanchion or stocks or with the right side against a wall. The animal should either be tied or held by an assistant. Clip the hair off high up on the flank where cattle are punctured. Wash with carbolic acid and water; make an incision through the skin and muscle, running up and down; then open the paunch; insert a clean piece of cloth, wet in one part bi-chloride of mercury and 1,000 parts of warm water, to prevent the food getting into the abdomen; then remove as much of the food as necessary. Wash the edges of the wound, sewing up the paunch with catgut and leaving it in. Then sew up the muscles and later stitch the skin. Be sure to apply one part carbolic acid and thirty parts water to the wound three times a day. Keep the animal tolerably empty and the bowels open, feeding very little bulky food until the wound heals. (See "Impaction of the Paunch or Rumen.")

IMPACTION OF THE MANYPLIES OR OMASUM—MAWBOUND. The third stomach, which is called the omasum or manyplies, has a great number of leaves arranged so as to rub one another, thus keeping up a sort of grinding action on the food that passes between them. Sometimes food becomes wedged therein.

CAUSES.—Many cases occur when animals are turned on to new grass before it has grown long enough for them to eat without taking in a lot of the old grass and, as the old grass has very little nourishment, it very often

clogs this stomach. The same thing occurs in the fall when cattle eat dry withered grass and it also occurs when they eat dry corn fodder in the winter.

SYMPTOMS.—It very often comes on gradually much the same as constipation, finally causing some pain which is evidenced by the animal's kicking its belly and grunting at almost every breath. If pressed on the right side just below the ribs the animal evinces pain. If the disease goes on the fever increases and so does the abdominal pain. A sort of delirium and vertigo sets in which is very often followed by death. The symptoms of this ailment differ from those of impaction of the rumen for it causes no bloating of the left flank.

TREATMENT.—The treatment should be the same as I have prescribed for impaction of the rumen, or impaction in horses. Unfortunately, a surgical operation cannot be performed successfully in these cases, therefore it is much more fatal than impaction of the rumen.

PEOPLE'S HOME REMEDY FOR IMPACTION OF THE MANY-PLIES.—

1. **Salt and Salts.**—Give a drench of a pound of epsom salts and half a pound of common salt and then give two ounces of laudanum. Also give an ounce of alcohol every four hours.

INFLAMMATION OF THE FOURTH PART OF THE STOMACH.

—This disease is not nearly so likely to affect old cattle as young calves. It is very often brought on by eating frozen grass or frozen roots and it sometimes follows eating over-ripe grain. In calves it takes place when changing from sweet to sour milk; this is especially true in very young calves.

SYMPTOMS.—At first there is some diarrhea which is later followed by constipation; the nose is hot and dry; the ears and legs are cold; the pulse is quick and hard and the temperature is high.

TREATMENT.—Give raw linseed oil in three or four-ounce doses with from thirty to sixty drops of laudanum added and rub the abdomen with mustard and water and if the animal is in much pain give one dram of laudanum every two or three hours until relief is obtained. It is always good practice to clean out the stomach and bowels with oil. Feed easily digested food and not too much at a time.

RUPTURE OF THE STOMACH.—(See "Horse Department.")

DIARRHEA OR SCOURS.—Diarrhea may result from many different causes; however, there are two principal causes, the first being an increased action of the muscular coat of the bowels and the second an increased secretion of the juices.

CAUSES.—Eating too much food; eating a large quantity of food of an inferior quality; a sudden change of food; or sudden changes of temperature will very often bring on looseness of the bowels.

SYMPTOMS.—Nearly everyone is familiar with the symptoms of diarrhea. The bowels pass off too much watery excrement which is sometimes mixed with blood; the animal loses strength rapidly and also loses flesh and exhibits great thirst.

TREATMENT.—It is good practice to give a dose of either raw linseed or castor oil with one or two ounces of laudanum and, if necessary, give the laudanum every two or three hours until the bowel movements are lessened. I have known one-half ounce of copperas dissolved in a pint of water given three times a day to check bad cases. In other bad cases give one-half grain of corrosive sublimate in a pint of water at a dose three times

a day; or give 50 grains of salol three times a day; or give plenty of ginger in the feed.

COLIC.—

CAUSES.—Eating too much food, grass or vegetables, or drinking too much cold water will very often produce uncomfortable feelings in cattle and sometimes produce colic. However, colic in cattle is not nearly so common an ailment as in horses.

SYMPTOMS.—General uneasiness, casting the head from side to side, striking the belly with the hind feet, switching the tail, and lying down frequently are symptoms of colic. The pulse usually quickens during pain and occasionally the animal moans and grunts. Unless treatment is given the pain becomes more severe and some bloating takes place.

TREATMENT.—Give one ounce of sulphuric ether, one ounce of laudanum and one ounce of tincture of ginger in a quart of warm water as a drench; give all of this at one dose. If you have no drugs on hand give six ounces of whiskey. You can give any home colic remedy that is used in human practice, but be sure to give fifteen or twenty times as much at a dose as for a person. If much bloating takes place, give one-ounce doses of aromatic spirits of ammonia in a pint of cold water every thirty minutes until relief is obtained.

PEOPLE'S HOME REMEDIES FOR COLIC.—

1. **Whiskey, Pepper and Ginger.**—To a pint of warm water add half a pint of whiskey and a tablespoonful each of ginger and black pepper and give as a drench. This dose may be repeated in an hour if necessary.

2. **Linseed Oil and Turpentine.**—To a pint of raw linseed oil add one ounce of spirits of turpentine and give as a drench every two hours until relieved.

OFF-FEED—SUB-ACUTE INDIGESTION.—This is a very common ailment in cattle that are over-fed on grain and is most likely to affect those that are being fattened or cows which are forced to produce big records. Also, poor food may be the cause.

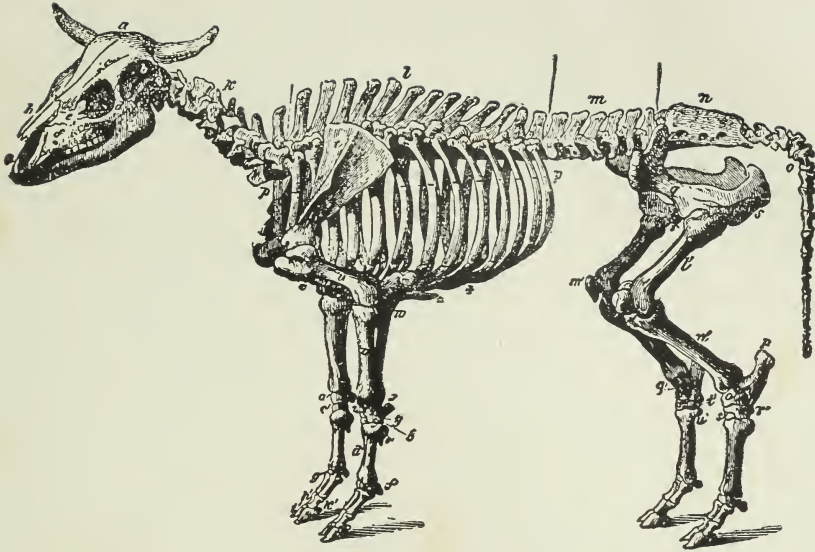
SYMPTOMS.—The animal refuses to eat all the feed put before it. There is some fullness and constipation or impaction of the rumen but very little, if any, pain.

TREATMENT.—Give a full dose of epsom salts, $1\frac{1}{2}$ pounds, with plenty of water; also give a teaspoonful of fluid extract of nux vomica in four ounces of sweet oil or raw linseed oil, at a dose three times a day. Feed lightly for a few days. Remedies recommended for chronic indigestion are suitable for cases of this kind.

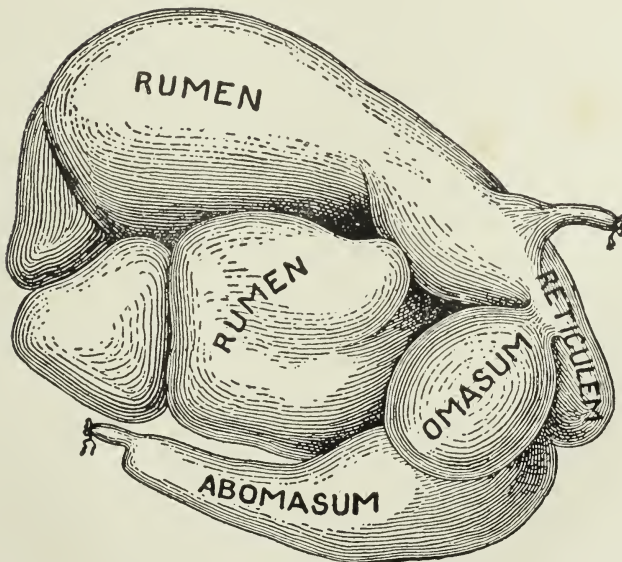
CHRONIC INDIGESTION.—This is a condition, which has lasted some time, in which the digestive organs have failed to perform their normal functions.

CAUSES.—It is generally the result of eating a poor quality of food or eating too much food without sufficient exercise but, fortunately, cattle are not nearly so likely to suffer from dyspepsia as horses. The worst cases of which I have ever known have resulted from eating large quantities of badly-cured, non-nutritious fodder when the animal was stabled in a filthy and badly ventilated barn.

SYMPTOMS.—The animal usually has a dry coat and presents an unthrifty appearance; the hide is tight to the bones; the appetite is either poor or capricious and the animal appears as though the food has done him no



SKELETON OF THE COW.



STOMACH OF THE COW.

good. When cows are affected they give very little milk and the bowels are usually costive.

TREATMENT.—Give easily digested food such as siage, vegetables, clover hay, bran, oats, corn and linseed meal with plenty of salt added. Also give a tablespoonful of the following compound powder at a dose in feed three times a day: gentian, baking soda, ginger and fenugreek, equal parts by weight. (Also see treatment for indigestion in horses.)

PEOPLE'S HOME REMEDIES FOR INDIGESTION.—

1. **Glauber's Salts.**—Give four ounces of Glauber's salts every three or four days until cured.

2. **Ginger as a Preventive of Indigestion.**—Give a tablespoonful of ginger and a tablespoonful of baking soda in the feed twice a day and it will be found to be a preventive of indigestion.

INDIGESTION IN YOUNG CALVES.—The digestive organs of a calf become somewhat sluggish and inactive, very often by an over supply of rich milk or by giving them milk from cows that calved long ago; or, it may result from not feeding calves often enough. It also occurs from feeding unwholesome food, keeping them in dirty, filthy pens and also from licking hair off other calves and themselves.

SYMPTOMS.—They are usually dull and dumpish, their breath has a bad odor, they are usually pot-bellied and the bowels generally costive, but in some cases they may have diarrhea.

TREATMENT.—Empty the stomach and bowels by giving a cathartic of castor oil or linseed oil. Also give some baking soda with their milk or in their feed, and give them some lime water. It is important to study the cause and remove it if possible; however, it is important to supply them with a good quantity of wholesome food.

PEOPLE'S HOME REMEDY FOR INDIGESTION IN CALVES.—

1. **Castor Oil, Soda and Ginger.**—For a calf three months old give a dose of 2 ounces of castor oil and $\frac{1}{2}$ ounce each of ginger and common baking soda. If the calf is scouring it is well to add 15 drops of laudanum to this remedy. Each morning, for a few days after giving the above, give half an ounce each of soda, salt and pulverized ginger in a little milk.

DEPRAVED APPETITE.—Cattle very frequently suffer from this peculiar affection and have a capricious appetite, many times showing a strong inclination to lick and eat filthy things such as the dung of horses and of other cattle. They are also inclined to lick lime, eat earth and chew rags and sponges.

CAUSES.—It is caused by eating bad food that has changed so as to become almost indigestible and that has little or no nutritive properties. It also occurs in cattle that are pastured on low marshy land and, strange to say, it affects some cattle and not others that are fed on the same quality of food.

SYMPTOMS.—There is an unthrifty condition, loss of flesh and strength and a disposition to eat the things above mentioned. They always show a rough, staring coat.

TREATMENT.—A change of feed is the most important step to be taken. Also give two tablespoonfuls of baking soda, two tablespoonfuls of ginger, two tablespoonfuls of ground gentian and the same quantity of powdered wood charcoal at a dose, either in feed or as a drench, three times a day. Be sure to keep the cattle from eating the kind of food that has brought

on this ailment and remember that remedies that are prescribed for chronic indigestion and dyspepsia are proper remedies for this disease.

LOSING THE CUD—REMASTICATION.—As far back as I can remember a great many owners of cattle have believed that it was possible for the ox to lose his cud, but it is only a belief for such is not true; therefore, you should not make the same mistake that many cattle owners have done in giving fat pork, rags, sponges and the filthy inwards of chickens with the view of improving the digestion and causing the animal to remasticate food. In order that you may better understand how cattle and other ruminating animals remasticate, let me say that the food is eaten hastily and swallowed when partially masticated. It passes on to the large paunch but later, by a sort of vomiting action, it is thrown into the lower portion of the gullet (œsophagus) and then the gullet reverses its action by contracting at its lower end first and thus it forces the food back into the mouth. This portion of the food is called the cud. After chewing this cud thoroughly the bolus is swallowed, not stopping at the paunch but generally passing on to the third stomach and after being more perfectly digested it passes to the true or fourth stomach, then on into the intestines. As soon as the bolus passes down another cud is passed up and so on until remastication ceases. Any disease that causes loss of appetite will of course have a tendency to prevent the ox chewing his cud, but as soon as his appetite returns and he eats fodder then his chewing of the cud returns.

DIARRHEA—GASTRIC CATARRH—WHITE SCOURS IN CALVES.—This ailment is very often the result of some error in feeding or of the lack of care that is given to the feeding utensils. It is much more common in hand-fed calves than those that suck their mothers; also, calves that are fed substitutes for milk are very often victims of white scours.

SYMPTOMS.—The symptoms are the passing of a thin, yellow excrement; general dullness; some uneasiness; loss of appetite and sometimes passing of blood and loss of flesh.

TREATMENT.—Give one and one-half ounces of castor oil with a teaspoonful of laudanum added; then give teaspoonful doses of laudanum four times a day and if the laudanum does not check the excessive bowel movements dissolve one ounce of sulphate of iron in a pint of water and give one-eighth part at a dose three times a day; or, try dissolving a teaspoonful of baking soda in two ounces of lime water and give this quantity three times a day. I have also known cases where tablespoonful doses of good flour corrected scours. In bad cases give ten grains of salol three or four times a day or give small doses of bi-chloride of mercury and water, one-half grain at a dose.

PEOPLE'S HOME REMEDIES FOR SCOURS OR DIARRHEA.—

1. **Alum.**—Dissolve a piece of alum as large as a hen's egg in a bucket of water and let the cow drink it. This will be found a very effective remedy for scours in either cattle or horses.

2. **Boiled Potatoes.**—Three times a day feed a peck of boiled potatoes while warm.

3. **Flour and Water.**—Give at one dose a quart of wheat flour mixed with water until it is smooth and just thin enough to run. The dose seldom has to be repeated.

4. **Salt.**—A handful of salt will frequently cure the scours.

5. **Camphor, Rhubarb and Laudanum.**—Mix equal parts of spirits of

camphor, tincture of rhubarb, and laudanum. This mixture should be put into one-half pint of water and given as a drench. The dose for a cow is a dessert spoonful and for a calf a teaspoonful. This dose may be repeated in three hours if necessary.

6. **Ginger, Charcoal and Baking Powder.**—Twice a day give a teaspoonful of a mixture of equal parts of charcoal, ginger and baking powder. This dose is for a small calf and may be given on the tongue or as a drench.

7. **Castor Oil.**—Give a tablespoonful of castor oil twice a day for a calf not over three months of age.

8. **White Scours in Calves.**—Three times a day give half a teaspoonful of laudanum in a tablespoonful of castor oil.

INFECTIOUS SCOURS.—This is a form of scours that attacks calves that are only a few days old and if not corrected it may terminate in death. This ailment usually is the result of diseased germs entering the body through the navel cord.

SYMPTOMS.—There is great weakness and the passing of thick liquid feces.

TREATMENT.—As curative treatment very often fails, an effort should be made to prevent this disease. Treat the navel as is suggested under that heading. Place the animal in a dry, clean stall and apply one part of carbolic acid and twenty parts water to the navel before and after the string has been applied and use disinfectants freely. Give five drops creosote in a tablespoonful of sweet oil twice a day. Also give five grains of salol three times a day.

DYSENTERY—BLOODY FLUX.—Dysentery usually commences in the colon but may extend to the other bowels until nearly all of them are affected. The mucous membrane is where most of the disease is located. It is brought on by feeding badly cured hay, poor grain or other food. There are certain acid and poisonous plants that bring it on and drinking bad water is another cause of dysentery.

SYMPTOMS.—The animal walks slowly and appears dumpish. It may have some abdominal pain and the muzzle is dry and the coat rough. It stands with the back arched and presents a sort of hide-bound and unhealthy appearance. At first the bowels act irregularly, the breath is fetid and so are the bowel movements and they are often streaked with blood. This disease very often terminates fatally.

TREATMENT.—This disease should be treated very much the same as diarrhea, always giving oil at first with quieting medicine and bowel anti-septics later. I believe in keeping the animal quiet and bringing it well under the influence of an opiate which gives the animal rest and always checks the excessive bowel movements. If the bowels are leaking blood, dissolve one dram of sugar of lead and two drams of fluid extract of ergot in a pint of water and give at one dose two or three times a day. Corrosive sublimate or salol solution should be given if other remedies fail.

CONSTIPATION.—A costive state of the bowels exists for want of sufficient moisture in the stomach and bowels, resulting from lack of exercise and water supply.

CAUSES.—This is caused by feeding too ripe food and too much dry fodder, preventing the animals from taking exercise, and not giving enough water. It is also the result of offering animals impure water of which they drink too little, thereby depriving themselves of sufficient moisture. In

young calves the bowels are inclined to be costive at birth and immediately after; but of course the first milk of a cow is laxative, but if it does not produce the desired effects a remedy should be given.

SYMPTOMS.—The passage of dry manure with a sort of glazed covering is a well marked symptom. The muzzle is often dry and the appetite poor. If not relieved it may result in inflammation of the bowels or impaction, causing bowel pain.

TREATMENT.—Give food of a laxative nature, such as well salted bran mash, vegetables or green food. Injections into the rectum of soap suds at blood heat is always good treatment. Give epsom salts or raw linseed oil to start the bowel movements and keep feeding plenty of salt which will increase thirst, thus causing the animal to drink plenty of water, which is nature's remedy. Besides, it is well to keep in mind that the bowels move three or four times as often when the animal is exercised as when standing still.

CONSTIPATION IN CALVES—RETENTION OF THE MECONIUM.—At birth the bowels contain a glue-like material which should be expelled very soon after birth for if not it may do harm. The first milk (colostrum) possesses laxative properties and if the calf sucks plenty of it the bowels are liable to loosen, but if they do not, push in a small piece of soap or a glycerine suppository or inject into the bowel some sweet oil or warm soap suds, but be very careful not to injure the bowel. If the milk from the mother fails to open the bowels give an ounce of epsom salts and repeat in six hours if needed.

ENTERITIS—INFLAMMATION OF THE BOWELS.—This is an inflammation of the lining membrane and also involves the muscular wall of the bowels.

CAUSES.—It comes from eating infected or poisonous things, either animal, vegetable or mineral and it may also be brought on by irritating drugs, drinking ice cold water, or chilling the surface of the body by exposure to cold rain storms or sleet.

SYMPTOMS.—There is very often constipation of the bowels and the excrement which is passed is usually covered with a slimy mucus; besides, the dung has an offensive odor and is sometimes streaked with blood. There is loss of appetite, high fever, quick pulse, dry mouth and muzzle and in cows the milk flow almost ceases. The urine is highly colored, the animal may bloat, and as the disease progresses the ears and legs grow cold and it is not unusual for death to follow.

TREATMENT.—Ascertain the cause if possible. If brought on by irritating poisons, either vegetable or mineral, give two ounces of sweet oil and one ounce of laudanum in a quart of linseed gruel every three or four hours; also give thirty drops of fluid extract of aconite at a dose every three hours until the temperature lowers. Also give a tablespoonful of powdered saltpeter in the drinking water three times a day. If occurring in summer or during temperate weather, apply blankets wrung out of hot water, covering them with dry ones and changing them every hour. After recovery takes place the animal should be fed on easily digested food that is not too bulky and if the appetite is poor give tonics, such as gentian in one-ounce doses three times a day; or give other remedies recommended for chronic indigestion.

PERITONITIS.—This is an inflammation of the membrane that covers the bowels and other abdominal viscera and also lines the abdominal cavity.

CAUSES.—It is brought on by exposure to cold rain storms or standing in a cool wind after being in a heated condition or by lying too long on cold frozen ground. It sometimes follows castration or spaying; sometimes follows calving and I have frequently found it to follow punctured wounds which penetrated the belly. It is also caused by kicks from horses, being hooked by cattle or running against hard things, such as posts. It may be caused by hanging on fences and the consequent bruising of the abdomen.

SYMPTOMS.—There is considerable uneasiness with shivering and a turning of the head toward the sides. There is a dry muzzle and no rumination. The legs are placed well under the belly, the pulse is quick and small, the temperature is high and the bowel movements are dry and hard. Applying pressure to the flanks produces considerable pain. Sometimes the symptoms are very much like those of inflammation of the bowels.

TREATMENT.—Try to ascertain the cause. If from a puncture the treatment of course will differ somewhat from the treatment of cases caused by exposure. Apply hot packs such as suggested for treatment in inflammation of the bowels. If there is a wound, treat it as such by applying peroxide of hydrogen first, then inject one part carbolic acid and thirty or fifty of water. Also apply equal parts of iodoform and boric acid and give the same internal treatment as prescribed for enteritis.

CORNSTALK DISEASE.—This is a disease brought on by cattle eating too much infected corn fodder. The disease occurs throughout the Western and Middle States. This corn fodder appears to either produce a very acute indigestion or poisons the animal and young cattle are usually affected more than the old ones; besides, the fodder seems to be most harmful after cold rain storms which perhaps add to its poisonous properties. Cattle that are hungry when turned into these corn fields soon become affected if they eat large quantities of fodder where the stalks have been unusually rank in growth; or, cattle that are turned from one lot to another often seem to suffer from this ailment.

SYMPTOMS.—The first symptom noticed is the sick animal's being away from the herd and standing with the back arched. When obliged to walk it goes with a wabbling gait, twitching the tail and very often kicking its belly and is usually somewhat delirious, which symptom becomes more pronounced, the animal acting as though in great pain. The animal frequently dies within twenty-four hours after showing symptoms of this disease.

TREATMENT.—Avoid turning hungry animals into such corn fields and allowing them to remain very long in the lot; besides, feed other food and it should be of a laxative nature, such as alfalfa or millet. See that they have plenty of salt. Following these directions will greatly assist in preventing the death of cattle from this ailment for there is no sure remedy.

PEOPLE'S HOME REMEDIES FOR CORNSTALK DISEASE.—

1. **Tansy Tea.**—Frequently give five-pint doses of tansy tea and a cure will be effected.

2. **Preventive.**—Accustom the cows to eating corn and stalks before turning them into the field and you will have no trouble with cornstalk impaction. Also see that they have plenty of salt and good water.

HAIR OR BINDER TWINE BALLS.—It is not uncommon to find

hair balls or balls composed of binder twine in the reticulum or in the rumen or paunch.

CAUSES.—Hair balls are caused by one animal's licking another during the shedding season and they also eat binder twine with their fodder which of course is not digestible and often forms into balls.

SYMPTOMS.—These are rather puzzling cases to diagnose; however, they cause much the same symptoms as indigestion. There is general uneasiness and loss of appetite but, strange to say, many cattle that are slaughtered have large hair and twine balls which have seemingly done no harm.

TREATMENT.—Treat the same as for impaction of the rumen and inflamed stomach, by giving epsom salts; or, cut open the same as for impacted rumen.

INTESTINAL TUMORS.—(See "Horse Department.")

INTUSSUSCEPTION.—(See "Horse Department.")

FALLING OF BOWEL—PROLAPSUS ANI.—(See "Horse Department.")

RUPTURE OF THE RECTUM.—(See "Horse Department.")

WORMS.—It is safe to say that cattle are bothered less with worms than any other species of domestic animals, therefore it is seldom necessary to treat them for intestinal worms. Tapeworms and round worms are sometimes found in the bowels of cattle.

SYMPTOMS.—Examine the manure and if you do not discover any worms, and your animals are thrifty, it will not be necessary to give them treatment.

TREATMENT.—For tapeworms give a tablespoonful of oil of male fern and two drams of powdered kamala in a pint of milk for three mornings in succession and, after the last dose has been given, give from one to two pounds of epsom salts in two quarts of warm water. This will act as a brisk cathartic. If you suspect that your cattle are wormy give two tablespoonfuls of the following compound powder at a dose in feed twice a day: powdered sulphate of iron, ground gentian, ground ginger, bi-carbonate of soda and ground worm seed. It is not always necessary to give as large doses as I have prescribed. Another very effectual remedy is to give one dram of san-tonine and thirty grains of calomel at a dose in feed every morning for three or four days and to follow with a cathartic of epsom salts. I have also obtained good results by giving oil of turpentine, two tablespoonfuls in a pint of raw linseed oil, once a day for a few days.

HERNIA OR RUPTURE.—A hernia, or rupture, is the displacement of some internal organ through a natural or unnatural opening. It generally has reference to the protrusion of the bowel and omentum through an opening in the wall of the abdomen.

VENTRAL HERNIA.—This is where the protrusion is through the abdominal wall and the skin remains intact.

CAUSES.—Hernia may be produced by kicks from horses or by blows of the horns of other cattle or by falls or sprains. It may also occur in advanced cases of pregnancy owing to the stretching of the muscles and in old cows it may come on without any apparent injury.

SYMPTOMS.—A rupture in cattle is very often found on the right side and when it occurs it is not usually painful, but later on may enlarge to such an extent as to allow the bowel to strangulate, then great pain sets in.

TREATMENT.—When a hernia can be reduced by pushing the parts

back into the abdomen and a pad with bandage applied so as to keep it in place the opening may close. Melted pitch and other counter-irritants, such as turpentine or cantharides, applied directly over the opening with a pad over this will assist in producing adhesive inflammation. When this treatment fails it is necessary to resort to surgical work. After the animal has been cast and rolled on the side or back, the skin is cut through, the muscles sewed with catgut and the skin sewed with heavy corded silk and an elastic bandage is then applied to support the stitches. This operation should be performed by either a veterinarian or an experienced dairyman.

UMBILICAL HERNIA (Navel Rupture).—This is a very common ailment in calves and as the navel opening is where the blood vessels pass from the foetus to enter the umbilical cord, this opening at birth should close, but it does not always do so. Therefore, some of the internal viscera may descend, causing what is called navel rupture.

CAUSES.—In some new-born calves the opening appears to be large. However, it is often enlarged at time of birth from the pulling loose of the cord, allowing the intestine to pass through it. It may also occur from kicks or blows.

SYMPTOMS.—An enlargement at the navel leads one to suspect that something is wrong and by pressing the end of the finger on the bunch you will readily push the sack back into the abdomen. This condition is abnormal.

TREATMENT.—Never be too hasty with remedies for many cases get well without treatment, nature effecting the cure, for as the animal grows older the muscles grow stronger and the disposition of nature is to close the opening. In some cases a pad and bandage applied seem to greatly assist nature in closing the opening. In a case where the intestines cannot be put back a surgical operation is necessary. Then the skin should be opened, the adhesions separated, the edges of the opening made raw, the muscles sewed together with catgut and the skin stitched with corded silk and an elastic bandage should then be applied and kept on until the wound heals. The stitches should remain in a week. A simple way to operate is to return the sack, put cross pins of either hickory wood or steel at right angles, tie a string back of the pins and leave it on until it sloughs off, then the calf will be well.

INGUINAL HERNIA.—This is a condition where a loop of the bowel passes down into the scrotum through the inguinal canal where the spermatic cord is, causing some enlargement of the scrotum. When the animal shows much pain and the scrotum is swollen, pass the hand into the rectum and explore the floor of the abdomen and it will be possible to pull up the bowel, but when doing so the animal should be placed on its back or the hind feet should be two feet higher than the fore feet. This will assist you in righting the bowel. If this occurs in a bull he had better be castrated by the covered method, using a clamp and allowing the testicles to slough off. If it occurs in a steer and he is in good condition, market him.

SCROTAL HERNIA.—This is when the bowel passes down the canal into the scrotum and I have known many calves to be in this condition at birth. Everything goes on all right so long as the opening is large enough to allow the feces to pass through the loop of bowel without the intestine becoming strangulated or impacted, thus causing inflammation. The opening in young animals has a tendency to close and it very often does so, crowding the bowel up into the body. In many cases the animal suffers no

special inconvenience and requires no treatment, but if they do require treatment they should be castrated by the covered operation. (See "Castration" in Horse Department.)

DIAPHRAGMATIC HERNIA.—This may occur from violent muscular efforts or the diaphragm may become lacerated from a broken rib or any other offending body. No matter how slight may be the rupture of the diaphragm it is a serious trouble and not much can be done in the line of treatment to relieve it except to give rest. Anodynes will allow a slight case to merge along into the chronic form. However, it seldom pays to treat them.

MESENTERIC AND OMENTAL HERNIA.—This is a condition where a complete obstruction of the bowels takes place and it is very difficult to make a diagnosis or apply a remedy.

VAGINAL HERNIA.—This sometimes takes place and when it does it should be treated the same as eversion of the vagina, by placing the animal in a position with the hind parts about a foot higher than the fore parts and giving laxatives to open the bowels and keeping the animal empty.

IRREGULAR TEETH.—Irregularity of the teeth is very often the result of an uneven wearing of them and the incisor teeth (nippers) are sometimes broken accidentally by cattle grazing on gravelly soil or by taking hold of mangers covered with hoop iron or by kicks, thus splitting the tooth. Also, some cattle have trouble when shedding their first teeth.

TREATMENT.—Examine the animal's mouth by placing a gag in the mouth to keep it open, or pull the tongue well forward and introduce the hand to keep it open. This can be done easily for I have seldom found it necessary to use anything except the closed hand, but of course a balling iron or mouth speculum is much more convenient on account of its holding the mouth open wider, thereby giving an inexperienced person a better opportunity to examine the back part of the mouth. It is seldom necessary to do more than to extract a tooth or file off the sharp cutting points that are wounding the cheeks, tongue or lips. For a mouth wash there is nothing better than borax and water, one ounce to a quart, and it should be applied three times a day.

CAPS ON THE TEETH.—Cattle between two and four years of age when shedding their temporary teeth or milk grinders sometimes have trouble on account of the first teeth or caps hanging on too long while the new teeth are growing in. This sometimes produces suppuration and a soreness of the mouth which is soon discovered by using the same means of examination which I have recommended under "Irregular Teeth."

TREATMENT.—Remove the cause by pulling off the cap with a pair of pincers or forceps, then wash the mouth with borax and water or any mild non-poisonous antiseptic solution you may have on hand. Borax and water or salt and water will prove very satisfactory.

DECAYED TEETH (Caries).—As nearly all stockmen and farmers know, whenever a tooth or bone is decaying it gives off a very offensive odor, differing entirely from that of any other decomposing tissue or part of the body. To make sure that a tooth is decaying use a balling iron or speculum or pull the tongue forward and close the hand, leaving it between the teeth and upper jaw to keep the mouth open, then introduce the other hand and examine for a decayed tooth.

TREATMENT.—The only satisfactory remedy is to extract the tooth

with a pair of forceps made for the purpose, then the opening in the jaw will soon close. I have often plugged the opening temporarily with gutta-percha and have found it to work nicely for it keeps the food out of the wound until the tissues grow and fill the openings.

INFLAMMATION OF THE TONGUE—GLOSSITIS.—

CAUSES.—This comes from injuries of any kind, from giving irritating drugs, from eating certain acrid plants which contain too much acid and irritating properties and it is also caused by a disturbed stomach.

SYMPTOMS.—There is generally some discharge of saliva from the mouth, the tongue and mouth are inflamed and in calves there are very often little red elevations noticed in the mouth. These red spots may suppurate in the center and show ulcerated patches. The tongue swells and frequently hangs out of the mouth.

TREATMENT.—When the mouth is only inflamed wash it out four or five times a day with a solution made by dissolving one-half pound of alum in a gallon of water and if there are any ulcers or ulcerated patches apply a caustic. The nitrate of silver pencil is the handiest. When the mouth shows a cankered condition give one ounce of baking soda at a dose as a drench in a quart of water. Or, give one ounce of powdered charcoal and forty grains of salol at a dose two or three times a day.

PEOPLE'S HOME REMEDIES FOR BLACK TONGUE.—

1. **Alum, Lime, Etc.**—The animal should be bled from the neck vein and then given a pint of castor oil which may be repeated in 10 hours if it has not operated. As a local application, use four ounces of burnt alum and two ounces of chloride of lime mixed in one gallon of water and frequently swab the mouth with this mixture.

INJURIES TO THE TONGUE.—(See "Horse Department.")

SORE MOUTH—STOMATITIS.—Young calves are usually the victims of this ailment and it usually comes on while they are teething.

CAUSES.—It frequently follows inflammation of the navel or comes on as a result of the lack of nutritious food and it may be the result of diarrhea. This disease is not nearly so common in grown animals as it is in calves and very often it occurs while they are cutting their teeth.

SYMPTOMS.—In the early stage there is usually some redness of the mouth and some discharge of saliva, and in a few days pointed sores appear which are white in color but soon change to yellow. The tissue breaks down and gives off an offensive odor. In some cases the ulceration is so extensive that the cheek is perforated. In severe cases where the animal has diarrhea death very often results in eight or ten days. In old cattle recovery seldom takes place in less than from fifteen to twenty-five days.

TREATMENT.—For a calf give eight grains of quinine at a dose four times a day and if there is diarrhea give a tablespoonful of lime water three or four times a day. If the animal shows great weakness give two tablespoonfuls of whiskey or brandy in a teacupful of sweetened water three or four times a day. To quiet the odor from the mouth use permanganate of potash and water, one dram to a pint, or put a tablespoonful of carbolic acid into a pint of water and swab the raw surfaces several times a day. The calf should be fed fresh cow's milk. Give tonics such as quinine, gentian and iron. For calves give ten or fifteen grains of quinine at a dose and for cows give not less than two drams at a dose two or three times a day.

SLAVERING.—Slavering is a dribbling or discharge of mucus and saliva from the mouth.

CAUSES.—Slavering is usually caused by some foreign body lodging in the mouth or by cattle eating irritating plants or licking fresh lime; or, it may be the result of applying mercurial ointment and it sometimes is caused by sharp points on the teeth. It is also one of the symptoms of foot and mouth disease.

TREATMENT.—First of all a very thorough examination of the mouth should be made to ascertain if there is any foreign body causing the trouble, and if such is the case it should be removed. Put one ounce of carbolic acid and two ounces of glycerine into three quarts of tepid water, or dissolve three ounces of powdered alum in a gallon of water, and wash out the mouth three or four times a day. Sometimes the edges of the teeth become sharp and irritate the mouth. This is easily remedied by filing off the points. Sometimes between the ages of two and four years the caps of temporary teeth, when shedding, cause an inflammation of the mouth which is readily remedied by pulling off these milk teeth.

VOMITING.—This is not a common ailment in cattle but it does sometimes follow irritation of either the first or fourth stomach and is no doubt the result of eating indigestible material such as pieces of cloth, leather, or any other substance that may act as an irritant. Besides, it is a result of indigestion and when it does occur it usually takes place in animals that are unthrifty. Vomiting generally lasts only a short time.

TREATMENT.—Feed easily digested food that is non-irritating, also give a small dose of epsom salts to clean out the stomach, or give one-half ounce of chloral hydrate and two ounces of sub-nitrate of bismuth in one quart of black coffee every six or eight hours.

CONGESTION OF THE LIVER—JAUNDICE OR YELLOWS.—

CAUSES.—Bile stones forming in the duct of the liver, thereby obstructing the free flow of bile, is what generally brings on a congested or inflamed condition of the liver.

SYMPTOMS.—By pressing the hand on the right side along the lower part of the short ribs the animal will evince pain; there is always loss of appetite and thirst; the urine is dark colored; the animal lies down quite a portion of the time; seldom moves about without being forced and walks with a staggering gait. In cows the secretion of milk is light and it very often has a bitter taste. The horns and ears are generally cold and in some cases there is coughing.

TREATMENT.—First of all, the bowels should be opened by giving from one to two pounds of epsom salts and after they act freely give three ounces of phosphate of soda in a quart of hot water twice a day, or give one-fourth pound Glauber's salts daily, or give four tablespoonfuls of baking soda and two tablespoonfuls of ginger at a dose in feed two or three times a day.

CIRRHOSSIS OR HARDENING OF LIVER.—(See "Horse Department.")

INFLAMMATION OF THE LIVER—HEPATITIS.—This is really an advanced stage of congestion of the liver but it may be confined to one part of the liver only as an abscess may form in this inflamed part.

SYMPTOMS.—It is no easy matter to make a correct diagnosis; however, the white of the eye and the membrane lining the mouth are always

yellow. The appetite is poor and the lower part of the belly appears full while the upper part appears empty. The animal usually lies down a considerable part of the time, showing weakness, with the head very often turned resting on the side.

TREATMENT.—Give one-half pound of Glauber's salts in three pints of tepid water at a dose once or twice a day or as often as necessary to open the bowels. Apply mustard and water over the liver twice a day and give one dram of quinine at a dose four times a day.

FLUKE DISEASE—WORM IN THE LIVER.—Cattle and sheep that pasture on low-lying, swampy, river-bottom lands are sometimes troubled with this ailment but, fortunately, it seems to be confined to certain localities. Usually cattle become infected during the rainy season.

CAUSES.—This parasite or fluke is doubtless taken in with the food or drinking water and finally lodges in the biliary duct of the liver. Here it grows and develops and is then passed off through the bowels to perhaps infect other cattle at some later day.

SYMPTOMS.—At first the animal thrives unusually well but when the flukes grow and multiply they set up an irritation in the liver. The liver softens and is easily torn and the animal becomes dull and swells under the throat. His membranes grow yellow, the skin becomes dry, the body dropsical and weakness and death soon follow. When cut open the parasites are found in the liver.

TREATMENT.—All diseased or affected animals should be killed and unaffected cattle removed to high and dry pasture lots. There is no danger in turning horses on affected pastures.

CHOKING.—This is a very common occurrence on the farm or in the dairy.

CAUSES.—The animal sometimes chokes when eating vegetables such as potatoes, turnips, beets, apples, or pears or when eating dry chaff or dry oats. It usually happens to animals that are ravenous eaters.

SYMPTOMS.—The animal suddenly stops eating, coughs some, breathes heavily, and slavers at the mouth. It pokes out the nose and acts as though swallowing but when water is poured down or the animal drinks it is soon ejected and causes distress. If the choke is in the neck region considerable bloating shows in the left side.

TREATMENT.—If the obstruction is in the mouth or well up in the throat the mouth should be held open with a balling iron; or, I have often used a horse shoe or clevis or a piece of wood. If the hand of the person is not too large the foreign body that is producing all the trouble can then be removed with the hand very conveniently. However, if the choke is low down a probang, which is made for this purpose, or a flexible buggy whip, or a piece of rubber hose corked with a piece of wood with the end of course made smooth, can be passed down the gullet and the object forced into the stomach. In performing this operation an assistant or two should take hold of the head and straighten out the nose in a line with the neck, as this makes easy the work of passing the probang. In some cases it is necessary to open the gullet and remove the obstruction, then stitch up the gullet wound and feed the animal on liquid diet for a week or ten days.

PEOPLE'S HOME REMEDIES FOR CHOKING.—

1. **Tobacco.**—Make a ball of fine-cut chewing tobacco as large as an egg, hold the cow's head up and put the tobacco back far enough in the

mouth so that she will have to swallow. This will cause sickness and vomiting and consequent relaxing of the muscles so that the apple or other obstruction will either be vomited up or worked down into the stomach. This remedy has saved many valuable cows and may be depended upon.

2. **Rubber Hose.**—Run a piece of rubber hose down the throat. Never use a whip or broomstick if any other remedy is at hand for fear of injuring or killing the animal.

3. **Egg.**—Break an egg into the animal's mouth and it will relieve the choking.

4. **Lard or Linseed Oil.**—Drench the animal with some melted lard or some linseed oil and then work the obstruction loose with the hands.

5. **Soft Soap.**—Dilute half a pint of soft soap with some water and pour down the animal's throat if it is choking.

STRICTURE OF THE ŒSOPHAGUS.—(See "Horse Department.")

DILATION OF THE ŒSOPHAGUS.—(See "Horse Department.")

ASCITES, ANASARCA OR DROPSY.—(See "Horse Department.")

LOCO DISEASE.—(See "Horse Department.")

DISEASES OF THE RESPIRATORY OR BREATHING ORGANS.

(Including Pneumonia, Pleurisy, Bronchitis, Hoose or Husk, Catarrh, Nasal Gleet, Malignant Catarrh, Sore Throat, Etc.)

PNEUMONIA — INFLAMMATION OF THE LUNGS — LUNG FEVER.—Pneumonia is an inflamed condition of the lung tissue.

CAUSES.—Pneumonia very often follows bronchitis, the inflammation extending to the lung tissue; or, it comes from colds and exposure during changeable weather, especially when the temperature is falling. It also results from exhaustion and stabling in damp, badly ventilated barns. Veterinarians are pretty well agreed that it is a germ ailment and very often infectious.

SYMPTOMS.—There is always a cessation of rumination (loss of cud), staring coat, more or less loss of appetite, and the animal usually has a chill. The respirations are quick, the pulse is also quick and the temperature goes up to 105 or 107 degrees. By sounding the chest a rasping sort of sound is heard which later changes to a murmur.

TREATMENT.—In the treatment of pneumonia the animal should be placed in a dry, comfortable stall free from drafts, the body kept warm and plenty of fresh air admitted. It is also important to supply the patient with all the cold water it will drink, but of course not large quantities at a time. Give twenty drops of fluid extract of aconite at a dose in one-half teacupful of cold water every four hours until the fever reduces and the temperature lowers within a degree or two of normal. Or, give three drams of nitrate of potassium at a dose every six hours until the fever subsides. This can be given in drinking water. When the circulation is weak give stimulants such as sweet spirits of nitre, in one and one-half-ounce doses, with five ounces of whiskey every six hours, or it can be given every four hours with good results. If the legs are cold, bandage them in cotton. If the body is cold blankets should be applied. I have found mustard and water applications to give relief when applied to the sides, also poultices of antiphlogistine, oil meal, warm bran and even cold packs with plenty of dry blankets over them have seemingly given relief. I have noticed good results to follow the steaming with either creosote or carbolic acid for a few minutes a few times daily. This is done by adding a tablespoonful of creosote or two tablespoonfuls of carbolic acid to one gallon of boiling water, keeping it warm and directing the stream into one or both nostrils for ten minutes at a time. Whenever signs of improvement are shown, discontinue giving fever medicine or you will do harm, but give tonics and laxatives. Give brandy, milk, eggs, also some quinine, gentian, ginger or any home tonic or stimulant and remember that good nursing has a whole lot to do with the successful treatment of pneumonia.

PEOPLE'S HOME REMEDIES FOR PNEUMONIA.—

1. **Salts and Mustard Plasters.**—Give a pound of epsom salts and apply mustard plasters freely.

PLEURISY.—Pleurisy is an inflammation of the pleura, which is a membrane that lines the chest and is reflected over the lungs. When inflamed it should be treated promptly for if allowed to go on and become chronic the inflammation usually terminates in water in the chest. This condition is called hydrothorax.

CAUSES.—The same causes which bring on other ailments such as laryngitis, bronchitis, inflammation of the lungs, and diseases of the respiratory organs will cause pleurisy. Besides, broken ribs and chest punctures very often bring it on.

SYMPTOMS.—There is always some fever, the pulse beats are wiry, the breathing is quickened, the elbows are turned well out and the breathing is done mostly with the abdominal muscles. In most cases of pleurisy there is a well-marked crease extending from back of the elbow to the flank. The act of expelling air from the lungs appears to be done with much more ease than the act of taking the air into the chest. Pressure applied to the space between the ribs causes pain and makes breathing more difficult. The nose is dry, the ears hang down, there is loss of appetite and it is not unusual for the animal to point the nose around to the side as if suffering pain. By tapping the ribs over the chest a clear sound is heard which is not the case in pneumonia; besides, the breath is not hot and there is no rasping noise as we hear in bronchitis.

TREATMENT.—If the bowels are not costive it will not be necessary to give a laxative but be sure to apply mustard and water to the chest daily. Give 25 drops of fluid extract of aconite every three hours in a teacupful of cold water. Also give one-half ounce of powdered saltpeter twice a day. The same treatment as for bronchitis and pneumonia in horses is also proper in cattle but give almost twice as much medicine at a dose to cattle as to horses. When a recovery does not take place promptly, water may accumulate in the chest and if this is the case follow the treatment prescribed for hydrothorax.

BRONCHITIS.—Bronchitis is an inflammation of the mucous membrane which lines the bronchial tubes.

CAUSES.—Exposure to storms, sudden change of temperature from hot to cold and neglected cases of catarrh and sore throat are causes of this disease.

SYMPTOMS.—The animal presents a rather peculiar expression, breathes with a grunt and has a painful cough, high temperature and no appetite. The disease generally reaches its height in three days and begins to let up in six or eight days.

TREATMENT.—Make the animal as comfortable as possible and apply mustard and water to the lower part of the neck and sides. I have found that good results follow the giving of injections of soap suds to open the bowels, but you must avoid purging. You will find treatment for this ailment given in the horse department but give larger doses to the cow than are prescribed for the horse.

HOOSE—HUSK—FILARIA BRONCHITIS.—This is an ailment that affects young animals more than aged ones and is brought on by young calves or lambs swallowing parasites in egg form which, when meeting the heat and moisture of the body, soon grow and develop into small, slender, thread-like worms which fill up the air passages and if not treated produce death.

SYMPTOMS.—The coughing up of worms is very often the first means

of knowing what the ailment is. The coat becomes dry, a suffocating sort of breathing soon sets in and a husky cough follows.

TREATMENT.—Feed plenty of grain, vegetables and grass. Give one ounce of turpentine in twelve ounces of raw linseed oil at a dose twice a day for a few days, then once daily for a few days if you believe it is necessary to continue the treatment. Place all the infected animals in a closed building and then put small quantities of sulphur on a hot shovel. This will make fumes which will kill the worms by being breathed but, for fear of suffocation, the attendant should remain in the building with the cattle.

CATARRH—COLD IN THE HEAD.—Catarrh or cold in the head is a congestion, irritation or inflammation of the lining membrane of the nose and passages of the head, sometimes extending to the throat and eyes.

CAUSES.—Windy, dusty weather, damp stables, exposure to storms when the weather has changed from hot to cold, or allowing cattle to stand in a draft after severe exercise are causes of this disease.

SYMPTOMS.—There is a slight rise of temperature, sometimes a cough, generally some sneezing, a watery discharge from the nose and this discharge soon becomes thicker, the eyes are somewhat swollen and generally inflamed, the limbs are cold and also the tips of the horns, the pulse is quickened, the appetite is poor and the bowels are usually constipated.

TREATMENT.—Place the animal in a warm, clean, dry and comfortable stable and give one-half to one pound of epsom salts to open the bowels. One dose may be sufficient but if not repeat the dose in 24 hours. Also give 15-drop doses of tincture of aconite every three hours to reduce the fever and feed cooling, laxative foods. If necessary to steam the head follow treatment for catarrh in horses.

CHRONIC CATARRH—NASAL GLEET.—This is very often the result of neglected simple nasal catarrh or cold in the head and sometimes it becomes contagious.

CAUSES.—It is generally caused by neglected cases of nasal catarrh that terminate in nasal gleet or a sort of malignant catarrh which is perhaps due to small organisms similar to bacteria.

SYMPTOMS.—The nose is hot and dry; sometimes the animal chills; the eyes are sore, inflamed and generally closed; there is loss of appetite; the urine is scanty and the bowels costive. There is a high temperature, great thirst, coughing, a sloughing of the membranes of the mouth and the breath is generally fetid.

TREATMENT.—It is always good judgment to remove a sick animal that shows the above symptoms to a place by itself for fear of its infecting others. Give one and one-fourth or one and one-half pounds of epsom salts to open the bowels. Also give aconite or acetanilide to reduce the fever. Steam with creosote and hot water and give any good home tonic. Remember these cases take time to recover.

MALIGNANT CATARRH.—This is a condition of the upper air passages attended with offensive discharges from the nose and sometimes with sloughing. The disease is generally contagious.

CAUSES.—It is no doubt caused by some sort of minute organisms, but just what they are no one appears to know.

SYMPTOMS.—It is usually ushered in with a chill followed by fever. The muzzle is dry, the animal is dull and dumpish, the eyes are almost closed and somewhat swollen, the saliva drools from the mouth and the eyes

and nose discharge freely. The pulse is quick and weak, the cough increases, the bowels are generally costive or else too loose and the animal has great thirst but no appetite for food. The breath becomes fetid, the membranes highly inflamed and the passages of the head become stopped up. In many cases during the last stage there is quite extensive sloughing, great weakness and also a considerable fall of temperature. The eyeballs very often burst and death may result in ten days.

TREATMENT.—The animal should be kept away from all others and if it is summer time should be put in a cool place and if in winter kept warm. Give a pound or more of epsom salts in a quart or two of water to move the bowels and if very feverish give one dram of acetanilide and one ounce of alcohol in a pint of water at a dose four times a day; or, give thirty drops of fluid extract of aconite at a dose three or four times a day until the fever subsides. Also give one-half ounce of nitrate of potash at a dose in feed or water twice daily. Drop one ounce of carbolic acid or creosote into two quarts of water and keep the mixture hot enough to generate steam, which is to be directed into the nostrils three times a day for ten or fifteen minutes at a time. If you can arrange to direct the steam through a tube into one nostril at a time it will be all the better. As soon as the animal begins to recover give a good condition powder or tonic.

PEOPLE'S HOME REMEDIES FOR MALIGNANT CATARRHAL FEVER.—

1. **Steaming.**—Give injections to move the bowels and every four hours give two ounces of sweet spirits of nitre in a pint of water. The cow should be made to inhale steam arising from a bucket of hot water to which has been added a tablespoonful or two of carbolic acid.

SORE THROAT—LARYNGITIS.—Laryngitis, or sore throat, is an inflammation of the larynx.

CAUSES.—It is caused by coming out of a warm stable and standing in a cold draft or by exposure to cold storms of rain or snow.

SYMPTOMS.—Inability to eat or drink easily, breathing quicker, pulse more rapid with some fever, some drooling from the mouth, more or less dullness and a cough are symptoms of sore throat.

TREATMENT.—Apply equal parts of turpentine, aqua ammonia and sweet oil to the throat twice daily or apply antiphlogistine. Steam the head or dissolve one-fourth ounce of chlorate of potash in a quart of water and wash the throat three times a day.

MALIGNANT SORE THROAT.—Malignant sore throat in animals is very much like quinsy in man and it very often proves fatal.

CAUSES.—It is no doubt the result of some sort of infection; however, it is not well understood.

SYMPTOMS.—The early symptoms are very much like those of colds and distemper or simple sore throat. The mucous membranes inflame, the throat swells a great deal, the mouth is kept open, the tongue is covered with purple-like spots and the animal soon shows great weakness.

TREATMENT.—Steam the head with either creosote or carbolic acid and apply equal parts of turpentine, tincture of cantharides, aqua ammonia and raw linseed oil to the throat twice a day for two days; also poultice the throat. Put two drams of chlorate of potash and a teaspoonful of chloride of iron into four ounces of water and wash the throat every three hours.

If the case proves fatal either burn or bury the carcass deep to prevent infection of others.

TRACHEOTOMY (Inserting Tube in Windpipe).—(See “Horse Department.”)

PNEUMOTHORAX—AIR OR GAS IN THE CHEST.—(See “Horse Department.”)

HYDROTHORAX—WATER IN CHEST—DROPSY OF LUNGS.—(See “Horse Department.”)

NASAL POLYPUS.—(See “Horse Department.”)

DISEASES OF THE URINARY ORGANS.

(Including Diseases of the Kidneys and Bladder.)

INFLAMMATION OF THE KIDNEYS—NEPHRITIS.—This ailment is not very common in the ox and is generally brought on by injury of some kind, giving too strong diuretic medicine or eating acrid plants which act on the kidneys.

SYMPTOMS.—The symptoms are: colicky pains, uneasiness, passing small quantities of highly-colored urine, straddling, loss of appetite, arched back, sweating, quick breathing and quick pulse. The animal is weak and becomes more stupid.

TREATMENT.—Give a dose of epsom salts, not less than one pound; also a pint or two of raw linseed oil. Apply hot blankets to loins or mustard and water or hot poultices. Give 15 drops of tincture of aconite and a tea-spoonful of fluid extract of belladonna at a dose three or four times a day.

KIDNEY AILMENTS.—(See "Horse Department.")

INFLAMMATION OF THE BLADDER—CYSTITIS.—The mucous membrane of the bladder frequently inflames; however, the entire organ seldom does.

CAUSES.—Any disturbance of the digestive organs and eating infected food or food which makes the urine acid instead of alkaline, are likely to irritate the mucous membrane of the bladder. It also follows calculi, or giving strong drugs that act harshly on the urinary organs and it also follows a retention or holding of the urine too long.

SYMPTOMS.—There is loss of appetite, a rise of temperature, uneasiness, quick pulse and the urine is highly colored. Passing the hand into the rectum and pressing against the bladder produces pain. When the attack is severe and proper treatment is not given the animal soon dies from weakness.

TREATMENT.—Give one pound of epsom salts, apply hot blankets to the loins and flush out the bladder of cows with warm water. Give small doses of lithia in water or linseed tea.

RED WATER—HÆMATURIA.—This is a condition where either blood or the coloring matter of the blood is passing off by way of the kidneys.

CAUSES.—It is very often the result of an injury, calculi in the kidneys or bladder, eating poor food or poisonous plants, a specific disease such as Texas fever; or, it may result from giving irritating drugs.

TREATMENT.—If caused by poor food, make a change. Study the cause and treat accordingly. If caused by calculi, crush or remove them. Give tonics and such food as is recommended for indigestion. Iron, quinine, gentian, quassia or cod liver oil and good care will help all cases of red water in cattle.

DIABETES-INSIPIDUS OR PROFUSE URINATION.—The passing of enormous quantities of urine is generally called diabetes if the urine is of a clear, water-like color.

CAUSES.—The causes are: eating acrid diuretic plants; giving too much

sugar-producing food or swill; feeding musty, badly-cured fodder; or eating frozen food.

TREATMENT.—Change the food supply. Give one dram of iodide of potassium at a dose in either food or water three times a day; also give one-ounce doses of fluid extract of ergot twice a day, but be sure it is fresh medicine. If the appetite is poor give one dram of ground nux vomica, one-half ounce of gentian and one ounce of ginger at a dose two or three times a day.

URÆMIA.—This is where the urine is reabsorbed into the system, causing an excess of urea and of course blood poisoning.

SYMPTOMS.—Smell the skin and it has the odor of urine; besides, the animal has a dull, sick appearance.

TREATMENT.—Draw off the urine if the animal fails to pass it, give lithia in one-ounce doses, or give one ounce of fluid extract or powdered buchu leaves at a dose four times a day and a mild dose of epsom salts. If the animal is weak give two or three-ounce doses of liquor ammonia acetatis and be sure that this medicine is made fresh before you give it or it will do no good. Feed easily-digested food and keep the bowels open.

GRAVEL—CALCULI—STONE IN THE BLADDER.—It is not unusual to find calculi in the bladder or pelvis of the kidney in animals that pasture on limestone land or drink water that comes through limestone rock.

SYMPTOMS.—There is difficulty in passing the urine and the water is usually tinged with blood. Certain kinds of food appear to favor the formation of calculi in the bladder.

TREATMENT.—When an operation is necessary you had better call a veterinarian, unless the stone can be crushed by hand. By passing the hand into the rectum the stone can usually be found. In some cases it is necessary to cut them out.

TAPPING THE BLADDER OF THE OX OR BULL.—In cases where there is a stopping of the water it can be drawn off by cutting into the urethra just below the anus where the urethra turns over the angle of the pelvis. Be sure to make no larger opening than is absolutely necessary to admit the catheter. The wound should be well looked after and healed quickly. Apply equal parts of iodoform, boric acid and powdered alum twice a day.

INCONTINENCE OF URINE—ENURESIS.—This ailment is usually the result of paralysis of the muscle at the neck of the bladder and on account of its relaxed condition the urine leaks out of the bladder and dribbles away from the animal.

TREATMENT.—If the animal is in a weakened condition give it plenty of nourishing food and give one dram of fluid extract of nux vomica at a dose in feed three times a day. Also give one ounce of lithia at a dose in feed three times a day, and apply mustard plasters to the back every two days. I have known cold applications to the back to produce good results in some cases; however, they should not be kept on too long.

DISEASES OF THE GENERATIVE ORGANS.

(Including Pregnancy, Calving and All Attending Difficulties, Diseases of the Vagina and Womb, Milk Fever, Garget, Diseases of the New-born Calf, Spaying, Barrenness of Cows and Bulls, Castration, Etc.)

THE GENITAL ORGANS OF THE COW.—

THE OVARIES.—The ovaries of the cow are generally found to be smaller than in the mare but are much the same in all other respects.

THE WOMB, VAGINA, ETC.—The womb of the cow differs from the mare's not so much in shape as in that the inner surface is covered with "cotyledons" or button-like bodies which are small when the cow is not pregnant but are quite large near calving time. The afterbirth or placenta is attached to these buttons. The vagina of the cow is shorter than in the mare. The vulva is almost the same, but the clitoris is generally smaller in the cow than in the mare.

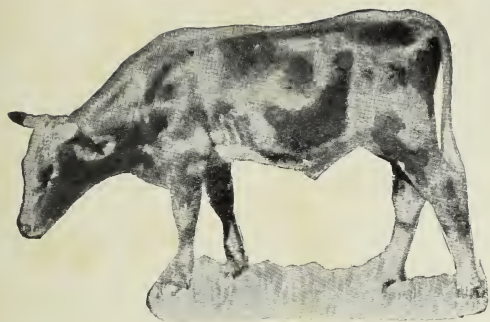
THE UDDER, MILK BAG OR MAMMARY GLAND.—This is divided into halves and each half is again divided. All four quarters secrete milk and drop it into a pouch which is situated just above the teats. Dairy-men should study the udder for here is where they have lots of trouble; therefore, they cannot know too much about the udder.

GESTATION IN COWS.—It can be safely stated that a cow, if in a normal condition, will carry the calf between two hundred and eighty and two hundred and ninety days or between nine and nine and one-half months. There are cases on record where cows have carried their calves eleven months and it is said that the produce is usually male when the cow carries her calf beyond nine and one-half months.

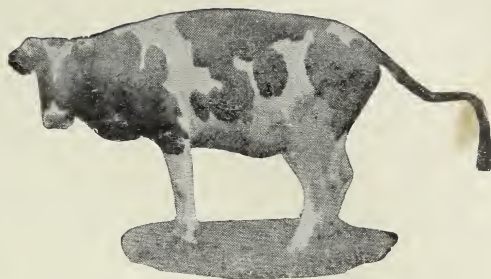
PREGNANCY AND HOW TO TELL IT.—When the cow is in good health she comes in heat every third week when not pregnant but of course there are exceptional cases. When pregnant she generally ceases to come in heat, becomes quieter, feeds better and is generally more thrifty and after a few weeks she begins to enlarge in the right flank and after the fifth or sixth month the calf will be seen to kick after the cow has taken a drink of cold water; or, by pressing the hand against the right flank a solid object can be felt and besides, if the hand is put into the rectum the calf may be felt. Young cows spring some four months before calving, the udder gradually increasing in size until parturition, but older cows do not make much bag until five or six weeks, or even less, before calving.

SYMPTOMS JUST PREVIOUS TO PARTURITION OR CALVING.—The vulva usually swells within a few days of calving and the udder fills gradually for a few weeks, but usually fills full and becomes hard within two or three days of calving and perhaps the most noticeable symptom is a falling away on each side of the hips close to the tail. When these symptoms appear the cow should be put into a comfortable place and away from other cattle or animals that may excite her.

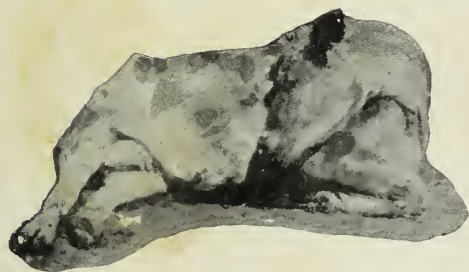
DIFFICULT CALVING—DIFFICULT FOALING—MALPRESENTATION.—If a mare or cow be in a healthy condition and strong and



TEXAS FEVER.



INFLAMMATION OF THE WOMB.
(Metritis.)



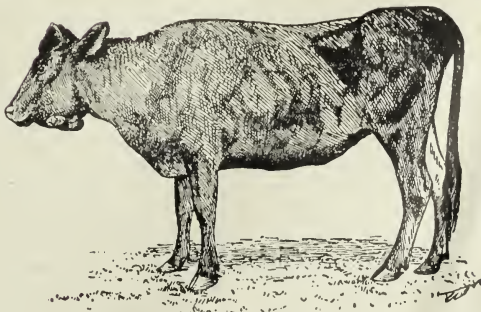
MILK FEVER OR PARTURIENT
APOPLEXY.



PARTURIENT PERITONITIS.



INPACTION OF THE MANYPLIES.



LUMP-JAW.



vigorous she will seldom experience any trouble in foaling or calving. Sometimes labor pains come on before the mouth of the womb has relaxed and in such cases the hand should be passed, using the thumb and finger at first and later the hand, to dilate the opening into the womb. Before passing the hand the nails should be cut short and made smooth and the hand oiled with one part carbolic acid and ten parts vaseline or sweet oil. It also assists matters to smear the neck of the womb with equal parts of fluid extract of belladonna and vaseline to assist in relaxing the parts. The normal position for a foal or calf to come is the forefeet first with the nose between the knees and when the mother is unable to expel the foetus assistance can be given her but it should be done gently for if not the colt or calf may be killed; besides, she should be assisted most when making an effort herself. Never pull on a colt or calf unless you are sure that you are pulling on both forefeet or both hind ones for unless you are a delivery cannot be accomplished. In some cases the colt or calf will be found dropsical, making it impossible for the foetus to pass. In these cases push the foetus back and tap its belly with a knife, then assist in the delivery. In other cases water is found in the head of the foetus and these cases also require tapping. The swelling is usually in the top of the head. The operation is best done with a trocar or small knife. A foal or calf may come with the forefeet and head turned back, or a forefoot and a hind one may come. Sometimes the head will appear and the forefeet be turned back and at other times all four feet appear to come together with the head turned back. Now, in order to deliver the colt or calf in these cases, the hind quarters of the animal should be raised eight or ten inches higher than the fore quarters and the foetus should be pushed back and placed in position and then either taken away normally or with the hind feet first. It is always good practice to tie soft pieces of rope around the head and feet before the foetus is pushed back into the uterus, but of course mark your ropes to know whether it is the head, a forefoot or a hind one. Keep in mind that there may be twins as these cases do sometimes occur in the mare and more frequently in the cow and when they do they are rather puzzling; consequently, a thorough examination should be made and good judgment used. After taking away the first one the second one usually comes away easily. Sometimes you will meet with deformities which may also puzzle you but whatever is done should be done without force, for the inner walls of the womb and vagina are easily lacerated or torn; besides, it is an easy matter to infect the mother. Therefore, be clean and use antiseptics and disinfectants freely. It is well to keep in mind that if the mare does not deliver foal within an hour or less after the labor commences there is something wrong; therefore, the case should be looked into right away for if looked after early she can be assisted much more easily and understandingly than if you delay. Besides, by being prompt you can very often save the mare or cow and the produce.

CLEANING—RETENTION OF PLACENTA OR AFTERBIRTH.—

Whenever the afterbirth does not come away in twelve or twenty-four hours it should be taken away by hand.

CAUSES.—Failure to clean properly is very often the result of premature parturition; poverty of the animal; too hurried delivery; adhesions which are the result of pre-existing inflammation in the womb; or, it may be the result of a failure to establish sufficient contraction of the uterus. If not removed it rots away, causing irritation, a putrid condition, a nasty

vaginal discharge, a rapid loss of condition and shrinkage in milk; besides, there may be absorption of putrid matter and a poisoning of the animal.

TREATMENT.—Give a mild dose of epsom salts to open the bowels. Tying a light weight to the afterbirth assists in stimulating the womb to contraction and expulsion of the afterbirth. The most satisfactory method is to remove it by hand in not less than twenty-four hours after parturition, before the mouth of womb has closed. The hand should be well oiled with one part carbolic acid and ten parts vaseline and be sure to cut the finger nails, making them smooth to prevent wounding the uterus or vagina. The protruding membranes should be gently pulled upon with the left hand while the right hand should be introduced into the womb and the connecting cotyledons or buttons crushed off from their connections with the womb. This process may be slow for there are many of these buttons but it will pay to take time enough to do the work properly. In operating, care should be taken not to injure the inner wall of the uterus and the work should be done thoroughly so as to prevent sloughing and a sub-acute inflammation of the uterus. To prevent a retention of the afterbirth try to guard against abortion and avoid having poverty stricken animals. All thin cows should be well fed for two or three weeks before calving and if this is done they will clean much better than if they are in a debilitated condition when they are calving.

PEOPLE'S HOME REMEDIES FOR RETENTION OF AFTER-BIRTH.—

1. **Saltpeter or Epsom Salts.**—If the cow does not clean properly give a tablespoonful of saltpeter three times a day; or, give $\frac{1}{4}$ pound epsom salts twice a day until the bowels move freely and afterbirth comes away.

CLOSING OF THE NECK OF THE WOMB AT CALVING.—It is not unusual when labor pains come on to find the neck of the womb not yet relaxed, making it impossible for the delivery of the calf.

SYMPTOMS.—Lack of results from labor pains should lead to an examination by hand which would reveal the fact that the neck of the womb is closed.

TREATMENT.—Saturate a soft piece of sponge or cloth with extract of belladonna, tie a string to it, push it into the neck of the womb and leave it there for a few hours; but if the neck of the uterus can be dilated with the hand without using too much force, do so and the cow will perhaps have her calf with little if any assistance. When the belladonna is applied the animal should be given ounce doses of chloral hydrate in a pint or two of water every three hours; or, give one-half ounce of fluid extract of opium to quiet her pains until the belladonna relaxes and opens the neck of the womb.

FLOODING—UTERINE HEMORRHAGE.—Hemorrhage very often occurs when a calf has been removed or when the cow is extremely weak. It may be the result of protracted labor or bungling assistance during parturition, or it may follow a removal of the afterbirth.

TREATMENT.—Pour cold water over the loins or inject some cold water into the womb, using a rubber tube and funnel; or, dissolve two ounces of alum in a quart of water and pour this solution in and, if this does not check the hemorrhage, fill the entire uterus with an alum solution of this same strength, closing the vulva or elevating the hind quarters so that the fluid will remain in the womb. Give one ounce of fluid extract of ergot at a dose every thirty or forty minutes until the hemorrhage ceases. After the bleeding has stopped the uterus should be washed out with clean water, using one part

carbolic acid to a hundred parts water. The animal should be kept perfectly quiet for twenty-four hours.

EVERSION OF THE VAGINA.—(See "Horse Department.")

EVERSION OF THE WOMB—WOMB OR CALF-BED TURNED INSIDE OUT.—This is a turning inside-out of the womb, brought on very often by the cow's lying with her hind parts too low and also by a continuation of the after-pains or a careless removal of the afterbirth and it sometimes occurs in weak cows at time of calving, from coughing or from over-feeding with bulky food. These all have a tendency to crowd out the uterus.

SYMPTOMS.—There is a protrusion of the uterus through the vagina to a greater or less extent.

TREATMENT.—By promptly calling a competent veterinarian the cow's life is often saved, unless the farmer or dairyman will use cleanliness and good judgment in replacing the womb without injury. First of all, place the cow with the forequarters about a foot lower than the hind ones and spread a clean sheet or towel that has been dipped in one part carbolic acid and fifty parts water or one part corrosive sublimate and one thousand parts tepid water. Clean the everted portion and hind parts of the cow by pouring on either of these preparations. The uterus should be supported with this sheet or towel, an assistant holding each end while the veterinarian or dairyman gently returns the parts to their normal place. Apply a surcingle snugly around the body at the flank, put two or three stitches in upper portion of vulva and keep her in the position I have suggested and also keep her from straining by giving her one-ounce doses of chloral hydrate and two-dram doses of fluid extract belladonna, or four-dram doses of fluid extract of opium, every five or six hours or as often as necessary to keep her quiet. Dissolve two ounces of sugar of lead and one ounce of carbolic acid in a gallon of water and wash out the vagina through a rubber hose with a funnel at the end, twice a day. Give her good care and plenty of nourishing food that is not too bulky. Now just a word of caution: Be very careful not to puncture a hole in the uterus or lacerate it. Be sure to have no sharp finger nails or dirty hands when you return the parts. Be sure that she has recovered before you allow her to run around or lie down with the hind parts too low.

CÆSAREAN OPERATION.—This is an operation whereby the calf is taken through the side of the cow. It is sometimes desirable to perform this operation in case of accident to the cow or mare, especially if they are thoroughbreds, for the purpose of saving their produce; besides, in difficult and impossible cases of delivery as a last resort this operation is performed. As this work is difficult it should never be attempted by any other person than a capable veterinary surgeon or physician. If the cow is exhausted and in a high state of inflammation her life cannot be saved but the calf can. In case the mother has just died, any person may operate and it is astonishing to know how successful dairymen are but I have never known inexperienced persons to operate and save both cow and calf.

RUPTURE OF THE WOMB.—A rupture of the womb seldom occurs unless a cow is roughly handled by hands or with instruments. However, it does occasionally occur when it is hard to tell the exact cause. The feet are sometimes pulled in such a way, when assisting in the delivery of the calf, as to rupture the uterus. When it occurs the bowels may protrude through the opening, causing hemorrhage.

TREATMENT.—If an eversion takes place, close the womb by stitching the tear closely with catgut, then return it to place, using solutions of one part carbolic acid to two hundred parts water and if the animal shows much pain give one-ounce doses of chloral hydrate or one ounce of fluid extract of opium at a dose, every three or four hours, until pain ceases.

DROPSY OF THE WOMB BEFORE CALVING.—This is caused by a derangement of the foetal membranes and there must be an excessive amount of fluid secreted around the foetus.

SYMPTOMS.—The belly of the cow grows to be unusually large but the fluid usually comes away at the proper time without doing any harm.

TREATMENT.—Feed the cow well and see that she has daily exercise; if she is weak, give tonics.

DROPSY OR SWELLING OF THE BELLY BEFORE PARTURITION.—(See "Horse Department.")

PARALYSIS OF THE HIND QUARTERS BEFORE CALVING.—Thin, weak, emaciated cows that are poorly fed and not sheltered sometimes lose the proper use of their hind quarters and are unable to get up without assistance.

TREATMENT.—Apply mustard and water to the back every day or two and give a tablespoonful or two of the following compound powder at a dose in feed three times a day. The powder is made by mixing ground gentian root, ground ginger, powdered saltpeter, baking soda, ground nux vomica and powdered charcoal. Also increase the animal's food supply, not forgetting to feed her some vegetables.

PARALYSIS AFTER CALVING.—This consists in either a partial or complete loss of power of the hind quarters after calving. It is caused by weakness or pressure from an unusually large calf.

TREATMENT.—Apply mustard and water to the back; blanket warm; feed on nourishing, laxative food and milk the cow four times a day. Also give two-dram doses of fluid extract of nux vomica and three drams of citrate of potash at a dose three times a day. Apply equal parts turpentine, aqua ammonia and sweet oil to the back daily if the mustard and water does not produce the desired results.

MILK FEVER—PARTURIENT APOPLEXY.—In this disease there is a congested condition of the brain and spinal cord and in every case it follows the act of parturition and as a rule seldom attacks a cow until after she has had two or more calves and it seems to be a disease which affects cows more than any other animals. It seldom attacks light milkers but usually selects the very best milk producers. Until within a few years it has been considered a fatal disease. High feeding, under-exercising and a plethoric condition leading up to apoplexy are doubtless predisposing causes. It invariably follows an easy parturition and a rapid emptying of the udder. It seldom, if ever, follows abortion and rarely occurs in a poorly-fed and debilitated cow. Following the latest methods of treatment a recovery generally takes place rapidly. The second attack is more likely to prove fatal than the first attack.

SYMPTOMS.—The first symptoms noticed may be the decrease in milk flow, some dullness, holding the head low, loss of appetite and a disinclination to move. The cow pays no attention to her calf and walks with an unsteady gait. The base of the horns and the poll are unusually hot but the surface of the body is colder than usual. The bowels become constipated,

the urine, if passed, is scanty and the bowel discharges are covered with mucus. The cow soon falls to the ground and becomes excited trying to rise. She throws her head about for a while but soon assumes a comatose state as though asleep. The eyes are glassy and not sensitive. The head is usually turned to one side and when pulled out straight she soon flops it back to the former position. She is usually bloated and the bladder is full. The disease may set in one hour after calving but usually occurs one, two or three days afterwards, seldom occurring later than ten days. The earlier it appears, I believe the more fatal it is. However, some cases that develop slowly terminate in death.

TREATMENT.—The treatment of milk fever in cattle has changed within the past few years and a reliable remedy has at last been found. The "oxygen" or what is commonly known as the "air treatment," if applied in time, will save ninety-five per cent. of the cows suffering with milk fever. The old treatment of blood-letting, giving large doses of cathartic medicine or whiskey or ammonia and applying mustard and turpentine to the back or using other strong liniments, also giving chloral hydrate and bromide of potash, was thought to be beneficial. However, it is not necessary in most cases to give drugs. Several years ago, Schmidt of Kolding, advised filling the udder with a sterilized solution of potassium iodide as soon as possible and this new treatment gave fairly good results. However, it is not much practised now. Sometimes a salt solution is used instead, but the air treatment gives much the best results. The iodide of potassium solution is made by dissolving two drams of iodide of potassium in a pint of clean boiled water and is injected into the four quarters, four ounces into each quarter of the udder. When called to treat a case, or if you do it yourself at home, first place the cow in a clean place, wash her udder with soap and water, wipe it clean, pour over a little alcohol or disinfectant, such as one part carbolic acid to fifty parts of water, or one part coal-tar disinfectant and thirty parts water. If you have oxygen at hand, use it; if not, fill the udder with clean sterilized air, but not until you have milked all the milk out of the udder. Be sure to knead the udder in order that it may be inflated thoroughly. Tie a tape around the neck of each teat to prevent the air from escaping. If the cow does not recover in five or six hours, repeat the air treatment. The teat tube should be clean. If you give the cow stimulants or any medicine it must be done through a rubber tube for if not the medicine is likely to go down the windpipe and bring on bronchial pneumonia. Cold water applied to the head is always helpful. The body should be kept warm and the legs hand rubbed. Never empty a cow's udder too soon after calving. Don't overfeed a fat cow before calving. Keep the bowels open and exercise her. In using the air treatment, if you have a milking tube and a common bicycle pump and no other appliances, use them, but try to blow pure air into the udder.

PEOPLE'S HOME REMEDIES FOR MILK FEVER.—

1. **Fresh Water.**—Immediately after calving see that the cow has plenty of fresh water to drink. Do not give too much at a dose but a pailful at short intervals. This is a preventive of milk fever.

2. **Proper Feeding.**—Feed but half the usual quantity of grain for two weeks before calving. For twenty-four hours after calving give nothing but fresh water, then begin with half ration and gradually increase the allowance. If adhered to this treatment will prevent milk fever.

3. **Soapsuds, Turpentine and Lard.**—Move the bowels with injections

of warm soapsuds and to the back and udder apply a mixture of one part turpentine and six parts lard twice a day for two days.

4. **Salts, Lard and Ginger.**—To a quart of warm lard add a pound of epsom salts and an ounce of pulverized ginger and give as a drench.

PUERPERAL FEVER.—This is a fever that often follows calving. It is brought on by exposure to cold and wet storms or by want of proper nourishment before calving. Young heifers, when they first come fresh, seem to be affected more frequently than older cows.

SYMPTOMS.—There is a quick pulse, high temperature, somewhat reddened mucous membranes, a lessened milk flow and the udder may be hot and tender.

TREATMENT.—Give a medium-sized dose of epsom salts and give ten drops of tincture of aconite every three hours until the fever reduces. Feed vegetables and slops instead of grain. In many cases it will not be necessary to give any medicine.

INFLAMMATION OF THE VAGINA—VAGINITIS.—This is an inflammation of the vagina and is generally the result of lacerations or injuries of some kind during calving.

SYMPTOMS.—There is always more or less swelling and an inflamed condition of the lining membrane with some mucus discharge.

TREATMENT.—Mild cases require little or no treatment. Inject some of the following lotion into the vagina two or three times a day—mix sugar of lead, one ounce and carbolic acid, two drams, with a gallon of water. This makes a useful application for such cases. Or, dissolve two ounces of powdered alum in a gallon of water or two drams of permanganate of potash in a gallon of water, or dissolve one-half pound of hypo-sulphite of soda in a gallon of water. Any of these makes a good application. However, in the treatment of such cases it is a good plan to change the treatment every few days. If the bowels are costive feed laxative food and give epsom salts and if the kidneys do not act freely give a tablespoonful of citrate of potash or powdered saltpeter at a dose two or three times a day.

INFLAMMATION OF THE WOMB—METRITIS.—This occurs a few days after calving. It is caused by the animal's getting wet or standing in a cold draft or it comes from the wrong kind of assistance during calving when infected hands and instruments have been used. It also follows eversion of the womb.

SYMPTOMS.—There is coldness of the extremities and surface of the body at first, followed by quick breathing and high fever. There is also loss of appetite and rumination ceases. There is some swelling of the vagina and the passage of blood-like mucus. The bowels are usually constipated and the animal stands with the back arched. By passing the hand into the rectum, the womb will be found swollen and tender. The milk flow diminishes and in some cases the cow becomes unconscious and shows symptoms of milk fever.

TREATMENT.—Treatment must be both local and internal. Give a laxative of epsom salts or linseed oil. Give ten drops of fluid extract of aconite and a teaspoonful of fluid extract of belladonna at a dose in a pint of cold water as a drench three or four times a day. Apply wet cloths to the head and hot blankets to the loins and if she is very feverish give one-dram doses of acetanilide four or five times a day and use the same injections recommended for vaginitis.

WHITES—LEUCORRHEA.—This is a chronic inflammation of the womb and vagina.

CAUSES.—It very often follows injuries sustained while the cow is being assisted in calving. It also follows a retention of the afterbirth and it very often follows abortion and sometimes results from wearing a pessary to prevent eversion of the vagina or womb.

SYMPTOMS.—There is a white discharge of more or less offensive mucus with some swelling of the vagina and vulva. There is also some shrinkage in milk and loss of flesh. The cow very often comes in heat too often and remains in heat longer than she otherwise would. In other cases she may not come in heat at all. By introducing the hand into the rectum the womb will be found somewhat enlarged.

TREATMENT.—As a rule mild astringents and antiseptic washes are proper remedies. First wash out the vagina and uterus with warm water, using a rubber tube with a funnel at the end. If the neck of the womb is closed it will be found necessary to dilate it in order to let the medicine come in contact with the inflamed parts. Dissolve one ounce of sugar of lead or one ounce of sulphate of iron, or three drams of permanganate of potash, or six ounces of hypo-sulphite of soda, or six drams of sulphate of zinc, or three ounces of powdered alum in a gallon of tepid water. Or, put six drams of carbolic acid and two ounces of glycerine into a gallon of water and use any one of the above solutions freely once a day until the discharge has almost ceased, then it will not be necessary to use the medicine so often. Feed less of vegetables and more grain; also give mineral tonics such as iron, copper and arsenic.

ABORTION—CONTAGIOUS ABORTION.—What is understood by abortion is the expulsion of the foetus before it is properly matured and at a time when it will not live outside of its mother. Abortion is perhaps most common in cows; however, it affects mares, sows and ewes. There are two common causes—accidents and contagion. If accidental and the animal cleans properly, bad results do not generally follow. However, if a miscarriage is due to either acute or chronic contagious abortion it should be regarded seriously for it is no easy matter to stamp this disease out of a herd. Cows affected with acute abortion may lose one, two or three calves and later the disease becomes chronic; then the cows may carry their calves nearly to if not to the full time. Cows suffering from chronic abortion do not as a rule yield as much milk as if they were in a healthy condition. Cows affected with accidental abortion usually show some effects of the accident but no well marked symptoms of abortion. But if due to contagion, little red patches can be seen on the lining membrane of the vulva; besides, if the herd bull is affected he usually has some catarrhal discharge. The germs of contagious abortion can be found in the genital organs of the cow and perhaps in the blood. They are also found in the stables where the animals are housed.

TREATMENT.—The genital organs of the cow and bull should be washed out with an antiseptic solution of some kind. Unless these germs are killed, not only in the animal but about the premises, especially the back part of stalls, you may expect future trouble and financial losses. Apply one part of carbolic acid and fifty parts of water, or one part corrosive sublimate to one thousand parts water, or one part chloride of zinc and one thousand parts water, or one part coal-tar disinfectant and thirty or forty parts water. Whichever lotion you use it should be injected or poured through a small

rubber tube with a funnel at the end and not less than three or four pints should be used at a time. Repeat once a day until the discharge ceases and the lining membrane appears normal. These same lotions will do for stall, floor and external hind parts of the cow. Whitewash is another useful thing to apply to stall and floor. Never forget the importance of separating the sick cow from the rest of the herd as soon as she aborts. Be thorough in the treatment of every cow that calves too soon. Some veterinarians are inclined to believe that the serum treatment, administered with a hypodermic syringe to destroy the germs in the mother's blood and system, is the only correct and reliable method of destroying this contagion. However, I must say that it has not given me satisfactory results and a majority of the veterinarians hold the same opinion.

PEOPLE'S HOME REMEDIES FOR PREVENTION OF ABORTION.

1. **Salt and Carbolic Acid.**—Thoroughly mix $\frac{1}{4}$ ounce of pure carbolic acid with a quart of salt. This quantity should be divided among four cows twice a month.

2. **Contagious Abortion.**—Once a day give each cow 15 drops of carbolic acid diluted in three pints of water. This may be sprinkled in the feed and should be continued for two months. Also inject into the vagina an ounce of lysol diluted with three quarts of warm water. This should be done once or twice a week for five or six weeks.

NYMPHOMANIA.—This is an unnatural desire on the part of the cow to have intercourse with a bull, she seemingly being constantly in season. When mated she seldom comes with calf and if she does she usually aborts.

TREATMENT.—Feeding rich stimulating food tends to make the cow worse. If caused by catarrh of the genital tract use cooling astringents, such as are recommended for leucorrhea but if the ovaries are diseased, spay her. Give a teaspoonful of saltpeter, a teaspoonful of fluid extract of belladonna and one-half teaspoonful of camphor at a dose in feed twice a day.

GARGET—MAMMITIS—INFLAMMATION OF THE UDDER.—This is a swelling accompanied by an inflammation of the udder or mammary gland and resulting in what is called garget, or caked bag. This usually occurs near the time of parturition but may appear at any time while the cow is giving milk.

CAUSES.—It is caused by anything that will produce an irritation of the bag such as an injury by a bruise, kick, blow, one animal stepping on the udder of another, exposure to cold winds, lying on wet frozen ground, germs entering the udder, and it very often follows the careless use of the milking tube.

SYMPTOMS.—Acute mammitis is generally ushered in by shivering which is soon followed by dullness and fever; however, in the milder forms these symptoms may not show but the udder will be found hot, swollen and somewhat tender. The milk is sometimes curdled and tinged with blood and unless a recovery takes place pus may form which is either discharged through the teat or opens outwardly. In many cases no suppuration takes place but the bag is inclined to harden and remain enlarged and in bad cases it becomes gangrenous and a portion of the udder sloughs off. One or more quarters may be affected. Some cows appear to be more liable to attacks of mammitis, or garget, than others.

TREATMENT.—Ascertain as quickly as possible whether it is due to an injury or bacterial infection. If due to cold or exposure keep the animal in a

warm comfortable place and bed her well so that she cannot bruise her udder. If she is fleshy and has been over fed, reduce her grain supply. Foment the udder with hot water and apply hot camphorated oil or hot raw linseed oil, or hot sweet oil, or hot vaseline twice a day. If her bowels are costive give her epsom salts and ginger. If she is feverish give one-half-ounce doses of saltpeter, or give two-ounce doses of hypo-sulphite of soda three times a day. In bad cases keep on hot fomentations almost constantly until the inflammation subsides. If you use a milking tube boil it in hot water for ten minutes each time before it is used, or dip it into one part carbolic acid and thirty parts water. In treating try to remove the cause.

PEOPLE'S HOME REMEDIES FOR GARGET OR CAKED UDDER.—

1. **Carrot Ointment.**—Grate some yellow carrot and simmer in lard to make an ointment. First bathe the udder with water as hot as the hand will bear, then dry and rub the ointment in thoroughly.

2. **Camphor and Sweet Oil.**—Dissolve one ounce of camphor gum in four ounces of sweet oil and rub well into the udder two or three times a day.

3. **Tallow, Beeswax and Rosin.**—Rub the bag with equal parts of mutton tallow, beeswax and rosin which have been melted together. A little currier's oil mixed with this will make it spread better.

4. **Hog's Lard.**—Rub the udder well with hog's lard.

5. **Salts and Soap Suds.**—Give a dose of epsom salts and rub the bag with hot soap suds.

6. **Poke Root.**—Feed one-half to one ounce of poke root and also apply a poke root poultice to the udder.

7. **Salts and Poultices.**—Give a pound of epsom salts and apply poultices of bran and hops which should be kept hot by pouring on hot water occasionally. The cow should be milked a dozen or fifteen times a day.

8. **Iodine.**—Once a day give the cow twenty drops of tincture of iodine in the feed. A reliable remedy.

BLOODY MILK. —

CAUSES.—This is usually the result of an injury caused by the cow's jumping or stepping over fences, over beams in the cow stables, over logs in the woods, one cow's hooking another, a colt's kicking the udder, lying down on hard substances or injuring the udder on the floor of the stall. Or it may be caused by careless milking.

TREATMENT.—Remove the cause if possible. Bed the cow well, bathe the udder with hot water and dissolve one-quarter pound of sugar of lead in a gallon of cold water and apply to the udder three times a day. Showering the udder with cold water for a few minutes has a tendency to close the open blood vessel. You should use care in milking. Nearly every owner of cows can ascertain the cause of his cow's giving bloody milk and if so he can remedy it by removing the cause. Bunting calves frequently cause their mothers to give bloody milk.

PEOPLE'S HOME REMEDIES FOR BLOODY MILK.—

1. **Aconite.**—Twice a day give twenty or thirty drops of tincture of aconite in dampened feed. You will be surprised at the effectiveness of this remedy.

STRINGY MILK.—Stringy milk is often the result of cows wading into stagnant ponds or rivers and getting the bag covered with filth and drinking this kind of water.

TREATMENT.—Keep the cattle out of ponds which contain impure

water and furnish them a good quality of water to drink. Wash their udders clean with soap and water and apply one part peroxide of hydrogen and four parts water. Also inject into the udder the same as directed in the treatment for blue milk.

PEOPLE'S HOME REMEDIES FOR STRINGY MILK.—

1. **Aconite.**—Give twenty or thirty drops of tincture of aconite twice a day.

BLUE MILK.—Milk presents a sky-blue color on account of its containing a great many germs. The germs may enter the milk after it has been milked or the milk may be blue on account of germs that have inhabited either the teat duct or udder.

TREATMENT.—If you are sure that the germs are in the udder or teat duct, inject one part lysol or one part carbolic acid in two hundred parts water or, in bad cases, use it twice this strength. In making these applications it is best to use a return flow syringe, or they should be carefully done with a common syringe, but be sure that it is clean. Whenever a fluid of this kind is injected into the udder it should be milked out after remaining in the gland or teat for a few minutes.

BLOCKED TEATS—STRICTURE OF THE TEATS.—This is a very common ailment in cows and is caused by an injury or an irritant of some kind in the milk passage which partially or completely closes the duct.

TREATMENT.—In many cases treatment is very unsatisfactory. Apply either iodine ointment or tincture of iodine lightly every day or two and if it is caused by a small polypus this can sometimes be removed with a wire loop passed up through the teat opening, cutting off the polypus at its base. In many cases I have found it necessary to cut down upon the bunch and remove it. This operation, however, should be performed when the cow is dry. When the operation has been performed, a probe or milking tube should be put into the teat and a milking tube should be left in until the wound heals or a stricture is likely to take place. I have often operated while the cow was giving milk and met with fairly good success; however, the operation is most satisfactory when the cow is dry.

PASSING THE MILKING TUBE.—Every dairyman and farmer knows what milking tubes are but the careless use of them produces serious udder troubles by infection for want of cleanliness. After it has been used the instrument should be cleaned in hot water and always boiled ten minutes before it is used again; or, it should be dipped into an antiseptic solution of one part carbolic acid and thirty parts water or a strong soda solution made by dissolving an ounce of baking soda in a pint of water; or, it should be allowed to remain in the oven for ten minutes before it is used. When passing the tube, turn it and use gentle pressure and you will not injure the teat duct and be sure that your tube is a little longer than the teat.

BLEEDING FROM THE NAVEL.—This may occur at time of birth or within a day or two afterwards. When the cord is cut too close to the navel and not tied a hemorrhage may take place and in a young animal with but little blood it soon produces great weakness.

TREATMENT.—Whenever any cord is left it is good practice to tie it with a clean piece of silk, linen or catgut. When there is much swelling a loop of the bowel may be down and if this be the case the bowel should be pressed upward and the cord then tied below the bowel, for if the bowel is tied in with the cord it will produce death. A solution of powdered alum,

copperas or lead, made by adding one-fourth of a pound of whichever is used to a gallon of water, should be applied to it twice a day. I might say that the navel of every young animal should be treated twice a day for a few days with an antiseptic such as one part carbolic acid and forty or fifty parts water, or one part coal-tar disinfectant and twenty parts water. Or, you may use any good home healing remedy, for if applied it will often prevent infection.

SUSPENDED BREATHING IN NEW-BORN CALVES.—When the circulation through the navel string stops, death soon follows unless breathing is established and it is astonishing how quickly the young calf makes an effort to breathe when the cool air strikes the surface of the body. This seems to produce contraction of the respiratory muscles and diaphragm. Many young calves die from suspended breathing just before or during birth on account of a closing of the navel cord from pressure which stops the circulation; besides, the calf is in such a position that it cannot breathe. It is always unfortunate for the foetal membranes to be pulled away from the womb in the early part of calving. With weak cows that have trouble calving and also when the membranes are wrapped over the head, the calf sometimes smothers.

TREATMENT.—Remove the membranes and clear the nose and mouth of mucus as soon as possible. Produce suction through the nostrils, outward; and sometimes blowing into the nostrils has a good effect. In some cases blowing air into the lungs revives a calf. Gentle artificial breathing by compressing the chest helps. Whatever is done should be done promptly but always avoid allowing a young calf to chill.

INFLAMMATION OF THE NAVEL URINE DUCT.—This is an inflammation of the urachus, or navel urine duct, and is generally the result of an injury.

SYMPTOMS.—There is always redness, heat, swelling and pain. This navel enlargement is always hard and extends backward and if the urine is examined it will perhaps contain some pus which shows that pus is being passed through the ordinary channel back into the bladder.

TREATMENT.—Apply one part of carbolic acid, one part of sugar of lead, six parts of glycerine and ten parts of water to the navel two or three times a day, commencing soon after birth. By doing so this trouble may be avoided as it is often the result of infection or a dripping of urine.

URINE DISCHARGED THROUGH THE NAVEL.—Before birth the urine of a foetus passes from the bladder through a special tube called the urachus, through the navel and string into the outer water bag and at birth this should close and the tube be drawn in toward the bladder. Male calves and colts are more likely to drip urine at the navel than females as the urethra of the male is sometimes small and not well developed.

TREATMENT.—If a portion of the cord remains it should be tied and allowed to dry up or wither away. If the ends are too short, apply the following lotion or powder. Dissolve one-quarter pound of sugar of lead and two ounces of tannic acid in a gallon of water and apply four times a day; or dust on equal parts of powdered alum and tannic acid; or apply Monsell's solution of iron; or apply a light blister, using cerate of cantharides, which produces swelling and closes the opening. Or, touch the leaking parts with the end of a red hot iron; this sets up inflammation and swelling which very often closes the opening. When the urethra and urachus are both closed and the urethra cannot be opened the urine may collect in the bladder, bringing on

uremia and death, but generally as soon as the urachus is closed the urine will pass off through the natural channel.

JOINT-ILL—INFLAMMATION OF THE JOINTS IN CALVES.—

This ailment very often affects calves from three to thirty days old and it may affect one or more joints but usually attacks the knee or hock. There is always more or less fever and inflammation in the joints and this is no doubt caused by a sort of infection passing into the body through the navel opening, hence the necessity of treating the navel of every young animal.

TREATMENT.—Foment the joints with hot water but never apply any strong liniment or blisters. Apply equal parts extract of witch hazel, alcohol, spirits of camphor and water. Or, apply soap liniment or lead lotion and if the colt is in much pain apply one part laudanum and four parts water.

SPAYING.—This operation consists in removing the ovaries in order that the cow or heifer will not come in heat again or breed. In young heifers it is best done by making an opening into the flank or flanks in the same location as for rumenotomy. In older animals the operation can be made by cutting through the wall of the vagina. The animal should be fasted for a day or two before the operation or it should be emptied out by giving a dose of cathartic medicine. Before operating the animal should be placed in stocks. Clip the hair off the flank high up and make an incision through the skin and muscles large enough to admit the hand. Pass the hand in, down and back until you find the womb. Follow it up to the end of the horn and you will find the ovary, which is about the size of a small finger; pass in a long ecraseur, slipping the ovary through the chain loop, and cut it off as is done in castrating colts with the ecraseur. When operating, cleanliness should be observed and antiseptics should be used; also be careful not to allow the ovary to drop into the abdominal cavity or it may produce death. Both ovaries can be taken through the one opening. However, some operators prefer to operate on both sides. I always operate on but one side and in cows I prefer to operate through the vagina. However, antiseptics and great cleanliness should be used in operating by this method. Inexperienced persons should not operate through the vagina.

BARRENNESS IN COWS AND BULLS.—

CAUSES.—This is very often the result of an acid condition of the genital tract or genital organs, or a diseased condition which is the result of germ infection. A catarrhal condition in either male or female usually produces barrenness. It is true that barrenness may be the result of debility and the want of proper food supply while, on the other hand, it is often the result of a plethoric condition which is the result of over-feeding and no exercise. In the male it is often due to too much service. It is also the result of an abnormal condition of the ovaries in the female or of the testicles in the male. Perhaps it is most often the result of neglect following a miscarriage and improper cleaning of the cow. In the female it is frequently caused by a closing of the neck of the womb.

TREATMENT.—If it is the result of debility, increase the food supply; if caused by plethora, reduce her feed. If an acid condition exists, dissolve a tablespoonful of baking soda in three pints or more of tepid water and wash out the vagina daily, or try the yeast treatment which has been explained in treating barrenness in mares. Before treating a case try to ascertain the cause. Use mild astringents, such as alum, sugar of lead, sulphate of zinc, chloride of zinc, carbolic acid, bi-chloride of mercury or any of the

coal-tar disinfectants, making the solutions weak. Before concluding that an animal is barren, it should be examined by a competent person who is able to tell why it does not breed.

THE GENITAL ORGANS OF THE BULL.—

THE TESTICLES.—The testicles of the bull are different in shape from those of the horse and the spermatic cord and artery are smaller in the bull than in the horse.

THE PENIS.—The penis is long and pointed and the sheath extends farther forward than in the horse. It is impossible to pass the catheter through the penis of the bull. While it is done fairly easily in the horse the curve in the bull's penis is too crooked to admit of the passage of a catheter.

CASTRATION OF BULLS AND CALVES.—This consists in removing the testicles. The best position for castrating a bull is the standing position but it is most convenient to cast young calves for this can easily be accomplished by hand. When necessary to throw a bull it can be done by the same methods used in castrating horses. If you have no travis or stocks, tie his head short to a post or in a corner, the right side against the wall and held there by an assistant; or, place a strap or surcingle around the body and tie him to the wall; then wash the testicles with carbolic lotion, one part carbolic acid to thirty parts of clean water; dip the hands and knife in this same lotion; take hold of the scrotum firmly, crowding both testicles low down; make a bold incision on back part of scrotum to its very bottom, allowing testicle to escape; take hold of one and draw it down, cutting loose the thin attachment on the fore part of the testicle; then cut off the cord well up, using an emasculator or ecraseur, or tie the cord with catgut or silk to prevent bleeding and let the ends of the string hang down out of the wound to be pulled off later. In young calves the cord can be cut off with scissors or a knife and they will not bleed enough to do any harm. The wounds should be treated once a day, using the carbolic lotion, peroxide of hydrogen, coal-tar disinfectants or any other good home healing remedy. Never forget the importance of saturating the string of catgut or silk you use in tying the cord in carbolized oil or carbolic lotion, also use the same for instruments and wound. Keep the animal in a clean stable or turn him into a pasture.

RIDGLING BULLS OR "RIGS."—These are animals where either one or both testicles have not come down into the scrotum.

TREATMENT.—A surgical operation such as is easily performed on stallions cannot be successfully performed on bulls, therefore they should be fattened before they become a nuisance and perhaps dangerous.

INFLAMMATION OF THE TESTICLES—ORCHITIS.—This is usually the result of an injury of some kind or a diseased condition of the parts or the result of excessive service.

SYMPTOMS.—Walking with a straddling gait, heat and tenderness of the gland and more or less swelling are the symptoms.

TREATMENT.—Give not less than one pound or one and one-half pounds of epsom salts with a tablespoonful of ginger added. Dissolve in two or three pints of water and give as a drench. Foment the testicles and scrotum with hot water and apply one part fluid extract of belladonna and six parts water. When it is not convenient to foment, apply a poultice of either linseed meal or antiphlogistine. Give the animal plenty of salt and a tablespoonful of saltpeter at a dose in feed twice a day. In some cases,

where the injury has been great, an abscess may form. If this be the case, open it and treat as recommended for abscess.

GONORRHEA—INFLAMMATION OF THE URETHRA.—This is an inflammation of the urethra, which conveys the urine from the bladder, and it is generally the result of infection from serving cows affected with leucorrhea, or of too frequent service; or, it may come from an acid, catarrhal condition of the mucous membrane of the urethra. Give epsom salts to open the bowels, bathe the sheath with hot water three times a day and dissolve one dram of permanganate of potash in half a gallon of water or dissolve one ounce of lysol in a gallon of water, and inject into the urethra once or twice a day. These applications are most conveniently made through a small rubber tube with a funnel attachment. Give one-half ounce of citrate of potash at a dose in feed three times a day or one ounce of lithia three times a day, or it will do no harm to give them both.

INJURIES TO THE SHEATH AND PENIS.—From animals being placed in slings or work oxen being placed in stocks to be shod or from cattle jumping fences the sheath and penis may be injured.

SYMPTOMS.—There is swelling and pain, causing some fever, and there is dryness of the muzzle. There is also straddling with loss of appetite and in the latter stages there may be some suppuration.

TREATMENT.—Apply hot packs or hot poultices of linseed meal or antiphlogistine and keep up these applications constantly, for prompt, energetic treatment saves the life of many a good bull or steer. Three or four times a day apply a lotion made by dissolving one-quarter pound of sugar of lead in a gallon of water and adding one pint of fluid extract of opium and one quart of witch hazel. If occurring in the summer season cold applications have a good effect. If suppuration takes place, open and treat with antiseptics.

DISEASES OF THE SKIN.

(Including Mange or Scab, Eczema, Ringworm, Erysipelas, Frostbites, Tumors, Abscesses, Warts, Sore and Chapped Teats, Grubs, Lice, Etc.)

MANGE, SCAB OR ITCH.—This ailment is caused by a mite very much like the parasite that causes sheep scab. Cattle itch, as it is called, is most prevalent throughout the West and Southwest during the winter season and is mostly confined to young cattle. Besides, it usually affects those that are in an unthrifty condition.

SYMPTOMS.—It produces itching about the neck and shoulders and the root of the tail and if not remedied extends over the rest of the body. The skin always becomes scurfy and the discharge hardens on the body. The hair sloughs out and the skin becomes wrinkled and thickened. This disease spreads rapidly in herds when the stock is unthrifty. Never confound this disease with eczema. Try to find the parasites; you will usually find them on the hair or scales.

TREATMENT.—As soon as the disease affects your animals, remove the sick to a clean, uninfected place and thoroughly disinfect it as well as the premises from which the affected ones were brought. Spray one part of carbolic acid and twenty or twenty-five parts of water on the stalls and on the ground or floors where the cattle have been standing and be very thorough in these applications. The department of agriculture recommends dissolving twenty-one pounds of flowers of sulphur and sixteen and three-quarter pounds of unslacked lime in one hundred gallons of water. The lime should be slacked with water enough to form a thick paste, sifting in the sulphur slowly but stirring the mixture well. Boil the mixture of sulphur and lime in twenty or thirty gallons of water for two hours until the sulphur disappears. Let it stand, draw off the clear liquid and add water to make one hundred gallons. Use this solution at blood heat and dip the cattle once every ten days or two weeks. Two or three applications is all that is necessary. The grooming tools should also be dipped.

PEOPLE'S HOME REMEDIES FOR MANGE, SCAB OR ITCH.—

1. **Aloes, Turpentine, Sulphur and Lard.**—With four ounces of lard mix three ounces of flower of sulphur, one ounce of spirits of turpentine and one dram of finely powdered aloes. Apply this ointment to the parts affected with mange, scab or itch.

ECZEMA—ACUTE AND CHRONIC.—Eczema is an inflammation of the skin which at first is acute and if not relieved becomes chronic.

CAUSES.—Poor grooming, allowing the animal to become filthy or lousy, over-feeding, keeping the animal in a stable which is too warm and damp, also feeding distillery slop or garbage may cause eczema.

SYMPTOMS.—There is always more or less heat and swelling of the skin; besides, there are very often little water blisters which generally break, discharge and soon heal, but others are appearing on different parts of the body. The animal has intense itching of the skin, especially the parts that are sore. In some cases large sores appear, discharge and remain raw for some time.

TREATMENT.—Give a full dose of epsom salts. From one to two pounds is usually required to get up a brisk action of the bowels. Also give four tablespoonfuls of baking soda or a dessert spoonful of powdered saltpeter at a dose in feed two or three times a day and give two tablespoonfuls of Glauber's salts in feed twice a day. Dissolve one-quarter pound of sugar of lead in one gallon of water and apply to sore parts three times a day, or dissolve six ounces of boric acid in a gallon of water and apply in the same way. Or, apply one part coal-tar disinfectant and thirty parts water or one part coal-tar disinfectant and fifteen parts sweet oil or apply zinc ointment. Feed well salted bran mashes, vegetables or grass.

ERYSIPELAS.—This is an inflammation of the skin that often extends into the deeper tissues, producing considerable pain and fever. It may be called an infectious ailment for one animal can take it from another by direct inoculation through a wound.

CAUSES.—It is due to a germ that makes its way into the body through a wound or skin abrasion which is possible by the animal's coming in contact with a sick animal or where it has been.

SYMPTOMS.—The skin is swollen and always hot and tender; the swelling usually pits on pressure and in severe cases it has a tendency toward the formation of pus.

TREATMENT.—Give from one to two pounds of epsom salts, one dose only; also give ten drops of fluid extract of aconite, twenty-five drops of fluid extract of belladonna and one-half ounce of powdered saltpeter at a dose in feed or water two or three times a day. If the animal is thin give tonics such as iron, quinine, quassia, etc. When pus forms the abscess should be opened and injected with one part corrosive sublimate and one thousand parts water or one part carbolic acid and thirty parts water. I have given the serum treatment with fairly good results, but it is too expensive to use in all cases.

SURFEIT—NETTLE-RASH—URTICARIA.—(See "Horse Department.")

RINGWORM.—This is an affection of the skin very common in cattle, and is due to a vegetable parasite.

SYMPTOMS.—The disease affects the skin of cattle in patches, the parasites grouping themselves in fields of two or three inches in diameter. Their favorite location is about the head and neck. The skin usually thickens and becomes scaly and crust-like. Ringworm parasites always cause itching.

TREATMENT.—Wash the crust off with soap suds and apply tincture of iodine or one part carbolic acid and fifteen parts sweet oil, or turpentine or kerosene. Be sure to disinfect or whitewash the stable.

PEOPLE'S HOME REMEDIES FOR RINGWORM.—

1. **Iodine.**—Scrape off the crusts and apply tincture of iodine and repeat in a week.

HIDE-BOUND.—(See "Horse Department.")

BURNS AND SCALDS.—For burns apply equal parts of linseed oil and lime water. The lime water is made by dissolving lime in water. The first water is somewhat bitter and should be poured off and the vessel refilled. Water absorbs only so much lime and no more. If you will cover the burn with baking soda or flour, then cover that with cotton or oakum it will exclude the air. Or, apply lead lotion which is made by dissolving two tablespoonfuls

of sugar of lead in a gallon of water. When blisters are opened the air should not be admitted nor the skin removed.

FROSTBITES.—In cold countries cattle very often suffer from frozen ears and this generally happens with those that are poorly fed and improperly stabled.

SYMPTOMS.—After freezing occurs the parts soon become swollen and painful; the frozen parts, however, soon again become cold and begin to shrivel and later on they drop off, leaving a raw sore.

TREATMENT.—Apply some good home liniment such as is made by mixing one part turpentine, one part aqua ammonia and eight parts sweet oil and if the frozen parts slough off apply equal parts of powdered alum, oxide of zinc and iodoform to the sore twice a day.

TUMORS.—Tumors are abnormal growths which very often follow an injury which sets up an inflammation inducing a growth of tissue. There are many different kinds of tumors and those that do not yield to treatment are usually of a malignant character.

TREATMENT.—The removal of tumors is the only satisfactory way to treat them and there are many different methods, but cutting them out is the best; however, care must be taken to prevent hemorrhage. Another method is to place an elastic band around the neck of the tumor or a thread or string can be used. This chokes the circulation and the bunch sloughs off. Another method is to burn them off with caustic or with a red hot iron. When a tumor is cut out with a knife the wound usually heals more quickly than from any other method. After the operation use any good home healing remedy.

PEOPLE'S HOME REMEDIES FOR FLESHY TUMORS.—

1. **Bin-iodide of Mercury.**—Make an ointment by thoroughly mixing one dram of bin-iodide of mercury with two ounces of vaseline and rub well into the tumor. Repeat in two weeks.

ABSCCESS.—An abscess is a collection of pus or purulent matter, the result of a morbid process.

CAUSES.—The cause is many times hard to trace; however, it often follows a bruise, strangles in horses, or some sort of infection resulting in the formation of pus in some part of the body. The most serious kind of abscesses are located in the abdominal cavity and in the brain.

TREATMENT.—Hot fomentations of water; or, bran, linseed oil or bread and milk poultices hasten the formation of pus. When the hair pulls out easily and the bunch fluctuates on pressure it should be opened and washed out with one part of peroxide of hydrogen and two or three parts of water, applied very slowly; ten minutes later use coal-tar disinfectant, carbolic acid, permanganate of potash, sulphate of zinc or sugar of lead. Of course any of these drugs should be diluted with water before it is applied. Any one of them will give you good results for I have tested their merits hundreds of times in the treatment of abscesses. Before pus forms paint the parts with tincture of iodine and it will often absorb the effusion and scatter or reduce the swelling.

WARTS.—These are usually the result of an injury to the skin and the most satisfactory way to get rid of them is to cut them off. Those that are flat can be taken off by applying acetic acid, nitrate of silver, salicylic acid or chromic acid every day or two. Sometimes castor oil will reduce them and I know veterinarians who believe that giving small doses of sulphur in the feed daily will remove warts, but I have my doubts as to this. In some

cases I use the red hot iron in preference to drugs. This is, of course, quicker than caustics and more likely to stop bleeding. As they are confined to the skin, cutting them out is the most satisfactory way to treat warts.

SORE TEATS—CRACKS AND SMALL WARTS.—The teats, during cold weather, are very often made sore by the saliva from calves' mouths which causes them to chap and crack open and when once sore they are not easily healed while the calf is allowed to suck. From the injury to the skin warty growths very often appear on the teats.

TREATMENT.—Clip the warty growths off with a pair of scissors or a sharp knife, or burn with lunar caustic. Apply any good home healing ointment such as is made by adding one part of boric acid to five parts of vaseline, or one part coal-tar disinfectant to six parts vaseline, or one part sub-nitrate of bismuth to five parts vaseline. There are many healing remedies that should not be applied to sore teats if the calf is allowed to suck the cow for fear that the medicine will act as a poison.

CHAPPED TEATS.—

CAUSES.—Cows that are sucked by calves outdoors during cold weather are very likely to have chapped teats on account of the teats remaining wet. Other causes are: laying on wet frozen ground or in snow, walking through wet grass, or allowing the bag to remain wet after milking; also, during the fly season flies are often numerous, biting and irritating the teats and udders of cows.

TREATMENT.—Apply any good home healing lotion or ointment that is not giving off an offensive odor which is likely to be absorbed by the milk at the time of milking. Apply oxide of zinc ointment or one part carbolic acid and fifteen parts vaseline; or, apply one part lemon juice and five parts glycerine. Or, dissolve one-quarter pound of sugar of lead in a gallon of water and apply twice a day.

WARBLES—GRUBS IN THE BACK.—These are little round lumps that appear on the backs of cattle during the winter and spring. They develop from the egg of the ox gad-fly. The eggs are deposited on the legs, licked off and remain in the mouth for a time, then make their way into the cellular tissue beneath the skin of the back and remain there until spring. These grubs annoy cattle and they damage the hide by boring holes in it.

TREATMENT.—Every warble should be treated in the early part of the winter by applying tincture of iodine, turpentine, coal-tar disinfectant or iodine ointment to the bunch. Or, apply one part turpentine and three parts lard twice a week. This will kill most of the grubs and the others may be liberated by making the opening larger with a sharp pen-knife and squeezing them out. Also apply some home healing remedy to the sores once a day. When squeezed out the grubs should be killed.

LICE.—There are two kinds of lice that infest cattle—the blood-sucking lice and the biting lice. There are two varieties of blood suckers, one kind with long noses and the other with short noses. These latter are the regular ox lice and are usually found on the neck and shoulders. The biting or bird louse is of a reddish color and is most commonly found on cattle.

SYMPTOMS.—Cattle become lousy during the winter and spring, perhaps on account of a run-down condition. A close examination should be made of all cattle, especially the thin ones during the winter months.

TREATMENT.—Apply equal parts of kerosene and soap suds, or one part coal-tar disinfectant and thirty parts water, or one part carbolic acid

and fifty parts water; or, boil one-quarter pound stavesacre seeds in a gallon of water for one hour and make up the quantity to one gallon before it is applied. These applications should be made daily for two or three days, then once every week until the lice and nits are destroyed. It is needless to say that lice generally attack thin, unthrifty cattle; therefore, it is necessary to feed them well and give them tonics, such as are recommended for chronic indigestion, etc.

PEOPLE'S HOME REMEDIES FOR LICE.—

1. **Sulphur and Lard.**—Apply sulphur ointment made by mixing an ounce of sulphur with four ounces of lard.

2. **Linseed Oil and Kerosene.**—Mix an ounce of kerosene with four ounces of raw linseed oil and apply to the infested parts.

3. **Sulphur and Linseed Oil.**—Apply a mixture of one part sulphur and four parts lard.

4. **Lard and Insect Powder.**—Mix an ounce of Persian insect powder with four ounces of fresh lard and use as an application for lice.

5. **Tobacco Tea.**—Pour a quart of boiling water over four ounces of tobacco leaves, let stand fifteen or twenty minutes, then strain and apply with a cloth or sponge.

6. **Onions.**—Give lousy cattle a few slices of onions in the feed and it is claimed it will rid them of lice.

7. **Wood Ashes.**—Sprinkle some fine wood ashes upon the parts infested with lice.

8. **Salt, Sulphur and Saltpeter.**—With ten ounces of salt mix two ounces of sulphur and one-half ounce of saltpeter. Keep this mixture before the cows constantly and they will not be bothered with lice.

BUFFALO GNAT.—This is a small, dark-colored fly with short silk-like hairs covering its body. In certain localities these flies appear every year as soon as warm weather comes and remain from one to six weeks. They seem to trouble cattle mostly in the morning and when numerous do great harm by sucking blood from the animal, causing weakness, shock, and many times death. If animals are unable to brush them off or drown them by wading into water they are sure to do harm. Mules suffer even more than cattle from the Buffalo Gnat.

TREATMENT.—Whenever the Buffalo Gnat appears build fires that will produce plenty of smoke, adding damp wood, some sulphur, rags, old pieces of leather and rubbish. If the animal shows weakness give plenty of whiskey in cold water, adding perhaps one dram of carbonate of ammonia or one dram of fluid extract of nux vomica. Apply fish oil, whale oil or cotton seed oil with oil of tar, carbolic acid or kerosene added, and keep the animal in a dark, cool place.

HORN FLY.—This is a small insect about one-half the size of a house fly which it somewhat resembles. Horn flies swarm around the head where they bite and cause the animal great annoyance. They also stick to the back and sides. Apply equal parts fish oil, coal oil and pine tar. By placing some of this mixture around the horns and ears the animal will suffer less. Nearly all the fly killers on the market keep them off; besides, there are many home remedies that work well, such as equal parts pine tar, fish oil, cotton seed oil and kerosene. Or, apply one part coal-tar disinfectant and thirty parts water twice daily. I have used crude oil and thought it worked fairly well. These flies seem to appear with the first warm weather and leave when frost comes.

PEOPLE'S HOME REMEDIES FOR KEEPING FLIES OFF OF STOCK.—

1. **Economical Treatment.**—Into an ordinary oil barrel put two and one-half gallons of zenoleum or coal-tar disinfectant and five gallons of cotton seed oil and fill the barrel with water. As occasion demands this may be used as a spray or applied with a cloth or sponge. It is not sticky, leaves the animal's coat in good condition, and is not expensive.

DISEASES OF THE EYE AND EAR.

INFLAMMATION OF THE EYES—OPHTHALMIA.—(See "Horse Department.")

PEOPLE'S HOME REMEDIES FOR SORE EYES.—

1. **Salts and Atropia.**—Give a pound of epsom salts and keep the bowels open with laxative feed. Bathe the eyes three or four times a day with warm water and after each bathing drop a few drops of the following solution into the eyes. Use two grains of sulphate of atropia to an ounce of water.

PERIODIC OPHTHALMIA—MOON BLINDNESS.—(See "Horse Department.")

INFLAMED EYES—CONTAGIOUS OPHTHALMIA.—This is a catarrhal condition and it may be the result of local causes or it may assume an epidemic form and affect a great many of the herd as the result of some irritant or germ carried in the air or coming from the soil. It is no doubt due to some sort of bacterial infection when it assumes an epidemic form.

TREATMENT.—Place the animal in a clean, dark, cool stable; give laxative food and fresh water to drink and also give epsom salts to open the bowels and one-half-ounce doses of saltpeter to reduce the fever and start the kidneys. Foment the eyes with cold water and blow boric acid into the eyes once a day.

IRITIS—RETINITIS.—(See "Horse Department.")

CONJUNCTIVITIS—CATARRH OF THE EYES.—This is an inflammation of the mucous membrane of the eye and it is best treated by applying either hot or cold applications, keeping the animal in a clean, well ventilated, dark stable and out of bright sunlight. If the bowels are costive give epsom salts; if the cow is feverish, give saltpeter or tincture of aconite. Feed a cooling, laxative diet. Dissolve boric acid in water and apply to the eyes three times a day. If the eyes continue to discharge mucus, blow a little calomel into them once a day.

INFLAMMATION OF THE HAW (MEMBRANA NICTITANS).—The haw often becomes inflamed and enlarged because of an injury by some foreign substance or because of a catarrhal inflammation of the eye.

TREATMENT.—Apply cold water freely. Also apply weak lead lotions with a little opium added and if the swelling does not recede and the muscle go back into place, run a thread through it, pull it out and clip it off with a pair of sharp scissors or a knife; then apply boric acid or any home eye wash two or three times a day.

WORM IN THE EYE.—(See "Horse Department.")

CANCER IN THE EYE—FUNGUS HÆMATODES.—Sometimes these cancerous growths appear in the eye and their cause is unknown. When there is cancer in the eye the ball usually bursts and a fungous growth soon appears.

TREATMENT.—The sooner the eyeball is removed, the quicker the animal will recover; this can be done painlessly by the use of an anæsthetic or cocaine; then apply any good home healing remedy.

AMAUROSIS—GLASS EYE—GUTTA SERENA.—This condition of the eye is due to paralysis of the optic nerve and its terminal expansion, the retina, without much change in the appearance of the eye itself. It may co-exist with periodic ophthalmia and cataract but not very often. It sometimes appears as a symptom of milk fever and in the last stages of other diseases. Injuries to the optic nerve, or standing for a long time in a dark stable brings it on. Mules in coal mines are often sufferers from this ailment. Amaurosis sometimes occurs in pregnant cows and mares and leaves a few days before calving or foaling. It also sometimes follows hemorrhage.

SYMPTOMS.—The pupillary opening seems to lose its elliptical form and become round and the eyeball enlarges and has a glassy appearance. Both eyes are generally affected unless it is the result of an injury, then one eye only may be affected. The sight is usually impaired and very often lost.

TREATMENT.—Give one-ounce doses of bromide of potash four times daily; or give one dram of ground nux vomica in the feed three times a day. Keep the animal in a stable with dim light and the bowels should be kept open.

CATARACT.—(See "Horse Department.")

FOREIGN BODIES IN THE EYE.—Quite often chaff, barley-beards, little pieces of wood, old leaves, pieces of fodder or weeds break off and remain in the eye, causing inflammation, blindness and sometimes an abscess.

TREATMENT.—Secure the animal and remove the object as carefully as possible without injuring the eyeball. If the eyeball is punctured there is generally loss of vision, but small punctured wounds may heal. Blow in some boric acid twice a day or apply one part extract of witch hazel and two parts water.

DISLOCATION OF THE EYEBALL.—It is not unusual for one animal to hook the eyeball out of another, or the eye is sometimes crowded out with the end of a walking cane or a punching stick.

TREATMENT.—If the optic nerve is not lacerated and the muscles too badly torn it is advisable to replace the eyeball and stitch the lids together or use a compress to hold the eye in place; however, if the attempt to replace it is unsuccessful cocaine should be used and the eyeball taken out.

INJURIES TO THE EYELIDS.—Cattle frequently meet with accidents by coming in contact with barbed wire or being hooked by other cattle. A splinter of wood may injure the eyelid or it may be injured by a nail.

TREATMENT.—If the wound is lacerated, trim off the edges and stitch with silk or linen thread and keep the parts dressed with boric acid or any good home healing remedy that will not injure the eye.

INFLAMMATION OF THE INTERNAL EAR—OTITIS.—This consists in an inflammation of the inner ear and sometimes the bone becomes diseased, especially if it is brought on by an injury; or, the ear may become sore from lump jaw or tubercular affections.

SYMPTOMS.—If but one ear is affected the head is held to one side. The animal may not eat well and in some cases pus is discharged, giving off an offensive odor.

TREATMENT.—Apply hot fomentations and pour into the ear very slowly one part peroxide of hydrogen and five parts water, then dust in some boric acid powder; or, if the animal appears to be in pain, pour in a small quantity of laudanum and sweet oil, one part of laudanum to ten or twelve parts of oil. Where a cooling astringent is required dissolve one ounce of

sugar of lead in two quarts of water and use some of this solution once or twice a day.

DISEASE OF THE CARTILAGE OF THE EAR.—When the ear becomes badly bruised the cartilage may become diseased and when it does the discharge is quite offensive.

TREATMENT.—If a pipe or sinus forms cut it out or rip it open and also cut away the diseased portion of the cartilage; then apply equal parts of boric acid and powdered alum twice a day or use any good home healing remedy.

ABSCCESS OF THE EAR.—It is not unusual for cattle to have abscesses of the ear for they are the result of either filth or injury.

TREATMENT.—Open the abscess freely, washing it out with one part peroxide of hydrogen and two parts water, then apply one part carbolic acid and fifty parts water; or, the inside of the abscess may be painted with tincture of iodine or injected with one part powdered sulphate of copper and one hundred parts water. Only two or three applications will be required.

FOREIGN BODIES IN THE EAR.—Whenever a foreign body lodges in the ear the animal shakes the head or rubs the head and ear against fences, trees, posts, etc.

TREATMENT.—Tie the animal short, examine the ear closely where there is good light and if a foreign body is found remove it with a pair of forceps. If the ear is much inflamed foment with hot water and apply boric acid or a weak lead lotion which is made by dissolving two ounces of sugar of lead in a gallon of water.

LACERATED EARS.—It is not unusual for the ears of cattle to be torn and lacerated by dogs.

TREATMENT.—If the wound is large and the ear torn much, cut off the ragged edges and stitch the wound with catgut or silk. You will find it difficult to get a proper union of the ear as the cartilage is of low vitality and consequently it is slow to unite. Apply any good home healing remedy, but don't take out the stitches too soon.

CONTAGIOUS DISEASES.

(Including Tuberculosis and the Tuberculin Test, Foot and Mouth Disease, Black-Leg, Cow-Pox, Anthrax, Contagious Pleura-Pneumonia, Texas or Southern Fever, Etc.)

TUBERCULOSIS.—Tuberculosis is a contagious disease attacking many animals but perhaps is most common in cattle. It is caused by germs or bacteria that are always present in an animal suffering with this disease.

CAUSES.—This disease is not nearly so hereditary as many believe for I have known many cows to be consumptive that gave birth to perfectly sound calves which showed no reaction whatever from the tuberculin test. The milk from diseased cows will infect not only domestic animals but man, especially children under eight years of age. The germs are passed out of the body with the excrement and are also sometimes discharged with the mucus from the nose. There is a great difference of opinion existing among bacteriologists, physicians and veterinarians as to whether consumption in man and tuberculosis in cattle are not about the same disease; anyhow, the germs that cause consumption in man and tuberculosis in cattle are very much alike.

SYMPTOMS.—As this disease may attack almost any part of the body, in either mild or severe form, it is difficult to state what the symptoms are. The lungs seem to be attacked most frequently; however, the liver, spleen, lymphatic glands, bones or joints may be the seat of this disease. When the lungs are affected and become badly diseased the animal falls away in flesh although eating plenty of food; the coat is rough; the eyes are somewhat sunken and the animal usually has a cough; but, strange to say, an animal may be badly affected and appear quite healthy; therefore, the only means of making a correct diagnosis is to test with tuberculin. The disease is contracted, no doubt, through wounds, by eating food or drinking water or by being inhaled; also, sucking calves may get the disease from drinking milk. The discharges from the nose may dry and blow some distance in the form of dust and be picked up by other cattle and produce tuberculosis. Every suspicious case should be examined after death on the farm or at the slaughter house to ascertain if any of the vital organs contain nodules or lumps which, if cut open, show a yellow substance which seems to be gritty, or if the nodule contains pus of a cheesy nature, or if the bunch be sort of fibrous. Very often the disease appears outside of the vital organs, showing tumor-like growths or bunches which, when cut into, appear as above described. These tubercles are sometimes exceedingly small and in other cases they are very large. The disease may be confined to one small tubercle or many of them may be scattered throughout the body. The tubercular bunch or deposit is quite often found in one or more of the lymphatic glands, in the throat, between the lungs, in the udder or along the border of the bowels. These glands when healthy vary in size from a small bean to a large marble and when cut open are found to be solid but when diseased they are always enlarged, showing a yellow material when cut open. It

is not unusual to find tubercles attached to the pleura lining the ribs, in the liver, spleen, lungs, womb or other organs of the body.

TREATMENT.—There is no known remedy; however, when feeding plenty of rich, easily-digested food and allowing the animal to breathe pure dry air it is astonishing how much nature will do to remedy this ailment. The best method of preventing the disease if it is not already in your herd is to allow no animal to come on your premises that has not been tested with tuberculin in the hands of a competent person, for I fully believe that no farmer or dairyman or stock raiser can afford to have tubercular cattle associating with healthy stock. They should be segregated and kept by themselves. If in emaciated condition it will not pay to keep them but if apparently healthy and vigorous they should be fatted and sold to a butcher where their carcasses can be examined by either local government meat inspectors or by a competent veterinarian or person who can determine whether the animal is fit for food or not.

THE TUBERCULIN TEST.—The only accurate means of detecting tuberculosis in cattle is by testing them with tuberculin. The temperature of the animals to be tested should be taken every two hours during the day to determine their normal temperature which should be about $101\frac{1}{2}$ degrees; of course, it may vary slightly but a majority of cattle have this temperature. The tuberculin should be injected under the skin in the region of the neck or back of the shoulder, late in the evening. Eight hours after the injection is made commence again taking the temperature and take it every hour or two during the following day. If the animal has the disease, some time between eight and twenty hours after the injection of tuberculin has been made, the temperature will show a rise of from two to six degrees above normal and then gradually recede towards evening. If the temperature rises only a degree it is not enough but if a degree and a half it should be regarded as suspicious. If the temperature does not rise higher than the highest point before injecting you can safely believe your animal free from tuberculosis. The test should never be made when a cow is in heat or suffering from any febrile ailment; she should not be given large quantities of cold water at a time on the days you are testing and if a reaction takes place you should be certain that nothing else contributed to cause it other than tuberculosis. Cows should not be tested closer than three or four weeks before calving or the same number of weeks after calving; also keep in mind that those that suffer the least from tuberculosis very often react most, while advanced and generalized cases may show little or no reaction from the test; however, a physical examination made by an expert may be sufficient to condemn the animal. When tuberculosis has once gained a foothold in a herd you will find it quite difficult to disinfect and fumigate the stables and premises thorough enough to prevent the cattle contracting the disease. Fumigate with formaldehyde or sulphur or use live steam; also spray with a three per cent. solution of carbolic acid, or one part corrosive sublimate and one thousand parts water or one part coal-tar disinfectant and fifty parts water. But even if you destroy the infection in the stable there are many other places about the premises that may perhaps escape the disinfectants.

FOOT AND MOUTH DISEASE—CONTAGIOUS ECZEMA.—This is a highly contagious fever of a specific nature marked by blisters in the mouth and also around the coronet of the foot and between the toes. It is

more common in cattle than in other domestic animals; however, sheep, goats and pigs may also suffer with it. This is a disease that is not well understood but is doubtless of the germ variety, due to a specific organism. Fortunately, it is not prevalent in this country; however, it did exist in the New England States during 1902, but was stamped out. Another outbreak occurred in Michigan during the latter part of 1908 and early part of 1909, which, by strict quarantine regulations enforced by the Bureau of Animal Industry, was also stamped out. As a rule the disease is not by any means fatal, but great loss is sustained by stock falling off in flesh and milk besides losses from restrictions of the live stock trade.

CAUSES.—It is doubtless due to a specific germ transmitted by direct contact, by eating infected food, drinking infected water or being housed in infected stables, cars or pens; or, it may be taken from the attendant. Perhaps the contagion may be carried in the air and also the milk of infected animals is contagious. The disease usually develops in two or three days, but may not develop before eighteen or twenty.

SYMPTOMS.—It usually sets in with a chill that is of short duration. There is an arched back, staring coat and a gaunt appearance with some shivering or slight twitching of the muscles. The animal usually shows some lameness, some discharge from eye and nostril and usually shows a quick pulse and elevated temperature. Blisters show in the mouth, on the udder and about the feet. These are filled with a watery sort of fluid but soon burst, leaving a raw surface. These blisters cause a discharge from the mouth which is thick and ropy. The animal soon finds it difficult to eat solid food, the feet frequently become very sore and the lungs may become affected.

TREATMENT.—The majority of cases recover without treatment; however, it is well to assist nature by applying to the sore mouth, udder and feet a lotion made from astringents or antiseptics. Dissolve one-quarter pound of alum or boric acid in a gallon of water and wash the sores twice a day; or, wash the mouth out with one part carbolic acid and two hundred parts water and apply one part carbolic acid and thirty parts water to the sores on the feet and udder twice a day. Or, dissolve one-quarter pound of sugar of lead and one ounce of carbolic acid in a gallon of water and apply twice a day. If the bowels are costive, give epsom salts and if the kidneys do not act freely, give saltpeter or citrate of potash and remember it is important to report cases of this kind to the proper authorities for their investigation. Your State Veterinarian, your County or City Board of Health or the Bureau of Animal Industry, Washington, D. C. are the proper parties to be notified.

PEOPLE'S HOME REMEDIES FOR FOOT AND MOUTH DISEASE.—

1. **General Treatment.**—Give plenty of good cold water and feed bran mash. If there is much fever dissolve an ounce of nitrate of potash in each bucket of water and give thirty drops of aconite every four hours. Coal-tar disinfectants should be applied to the feet twice a day.

BLACK-LEG—BLACK QUARTER.—

CAUSES.—This is an infectious disease produced by a bacillus which lives in the soil of certain districts; besides, it also inhabits the bodies of diseased animals. Certain kinds of soil appear to suit this parasite and when once infected it usually remains so. Black-leg at one time was supposed to be anthrax fever but that was a mistake for they are two distinct and inde-

pendent diseases, each being caused by a different germ. One diseased animal does not infect another only by self-inoculation. The germ must enter a wound in the skin or mucous membrane of the body and is most likely to enter the body through wounds or skin abrasions on the legs. When an animal dies of black-leg it should be burned, not buried, for the germs should be kept out of the soil.

SYMPTOMS.—This disease is usually characterized by swellings on the upper portion of either one or more quarters of the body. Shortly after the animal is infected, a gas forms in the tissues beneath the skin, the gas being produced by the germ. When punctured, a bloody fluid with a bad odor oozes out. The animal loses appetite, has a high fever and generally shows considerable lameness.

TREATMENT.—No remedy has yet been discovered. Cattle should never be kept on infected ground unless they have been immunized, which can be done by vaccination or a protective inoculation. When vaccinated, cattle will not take the disease within a year but when calves have been vaccinated it is a good plan to do it over again in eight or ten months. All preventive medicines appear to fail. Whenever an outbreak occurs all the young animals should be removed at once to a non-infected pasture and be sure to supply them with a good quality of water. Black-leg vaccine is made by heating the flesh of a calf that died of the disease to a temperature that weakens the germs. One kind of vaccine that is prepared requires only one dose while the other kind has to be given ten or twelve days apart. The vaccine is put up in pill form and also as a string saturated with the virus. The pills are forced under the skin with a little gun, the string being pulled in with a needle. The vaccine is also put out in powder form to mix with water and inject under the skin.

PEOPLE'S HOME REMEDIES FOR BLACK-LEG.—

1. **Preventive.**—With three pounds of salt mix five ounces of sulphur, three ounces of copperas and one and one-half ounces each of saltpeter and air-slacked lime. Beginning several weeks before time for black-leg to attack them, keep this before the calves all the time.

2. **Salt and Salts.**—In a quart of water dissolve one-half teacupful of common salt and a small teacupful of salts. Repeat in five hours and then give once a day for two or three days. There is probably no remedy that will cure every case of black-leg but this one is worth a trial.

COW-POX—VARIOLA VACCINA.—This is a contagious disease similar in nature to small-pox in man, but of course milder. One cow takes it from another. Cow-pox exists in herds all over the world.

SYMPTOMS.—Small red pimples appear around the teats; in a few days they form a sort of blister containing a watery fluid which, if not broken, dry and form a dry scab which later scales off leaving the teat in a normal state. The animal generally has some fever.

TREATMENT.—About all the treatment required is to give the animal good care, laxative food and some saltpeter in the drinking water and apply zinc ointment to the sores once a day. I often apply one part carbolic acid and twenty parts sweet oil to the sores twice daily.

ANTHRAX—SPLENIC APOPLEXY.—Anthrax, or splenic apoplexy, is a disease confined mostly to cattle and is one of the most fatal diseases to which they are subject. It is due to micro-organisms, the anthrax bacilli, which can readily be seen under the microscope by examining the blood

taken from either the spleen or the ear, but this examination should be made before the carcass decomposes. The disease comes on suddenly, is of short duration and usually terminates fatally and is readily communicated to man and other animals.

SYMPTOMS.—The animal may appear well at night and be dead the next morning, or the disease may develop more gradually with high temperature, loss of appetite, suspended rumination, a chill followed by perspiration, a rapid and weak pulse and scanty and highly colored urine. There is great weakness, the animal walks with a staggering gait and the breathing is quick and difficult. The brain is generally affected, there is frothing at the mouth and the animal often bellows with pain and very often dies in convulsions.

TREATMENT.—When the disease is fully developed medical remedies have little effect, nature seemingly having to do it all; however, it is well to isolate the animal and give antiseptics such as carbolic acid or creosote in one-half-dram doses well diluted in water and freely use disinfectants such as coal-tar preparations. A cathartic of linseed oil should be given and the food and water supply should be changed. In all cases report the outbreak to your State Veterinarian or to the Bureau of Animal Industry at Washington, D. C. The carcass should not be opened to allow the blood to spill, but should be buried four feet under the ground or burned and the hide should go with the carcass.

CONTAGIOUS PLEURA-PNEUMONIA.—This is perhaps one of the most fatal ailments cattle are heir to and consists in an inflammation of the lungs and pleura. The exact nature of the contagion has never been fully determined. The disease usually develops in from three weeks to three months after exposure. Fortunately, the Bureau of Animal Industry stamped out this disease successfully and unless it is brought here again from some other country we shall perhaps not be troubled with it.

SYMPTOMS.—There is high temperature, loss of appetite, staring coat, chills, shrinkage in milk and the passing of small quantities of highly colored urine. There is tenderness over the lungs and the cough increases. There is quick breathing, a pointing out of the nose and an arching of the back and the hind legs are drawn under the body and the elbows kept well out. At first the chest sounds clear but later a dry crackling noise is heard which later changes to a dull sound. The disease seems to spread more rapidly during hot than cold weather.

TREATMENT.—It can perhaps be safely stated that fifty per cent. of the sick animals recover. On account of its seriousness it should be prevented if possible. No person should be allowed to come from a diseased herd and mix with healthy stock. When the disease breaks out in a herd the safest way is to destroy them, burn their carcasses, disinfect thoroughly and keep no more cattle on the premises for six months or a year.

TEXAS FEVER—SPANISH OR SPLENIC FEVER—SOUTHERN FEVER—TICK FEVER.—This is a fever caused by a microscopic parasite that is transmitted from southern to northern cattle by means of the southern tick. Southern cattle come here in summer from tick infested districts and infect our pastures by the female tick's dropping off the cattle and laying a great many eggs which mature and, in from two to six or seven weeks, crawl on to our native cattle and bury their mouths in the skin; in this man-

ner the disease is transmitted. Northern cattle taken south to infected districts show the disease in ten or fifteen days.

SYMPTOMS.—There is loss of appetite, high fever, suspended rumination, weakness and trembling. The head is held low, the bowels are costive, the urine is red and young ticks can be found where the skin is thin but you may need a magnifying glass to see them plainly. After death the blood will be found to be very thin and not to clot readily and the gall bladder will be found full and the spleen greatly enlarged. The liver is enlarged and quite yellow in color and the kidneys are somewhat congested and the bladder full of red urine.

TREATMENT.—Good nursing and feeding the animal plenty of easily-digested food will help save its life. Tonics such as quinine, gentian, cod-liver oil and alcoholic stimulants help brace the animal against the debilitating effects of these ticks. When first discovered, pick off as many of the ticks as possible and kill the rest with tick-killing dip. If the bowels are costive give a small dose of epsom salts. Eggs and milk with brandy or whiskey added help revive these cases. Cattle in the southern infested pastures become immune to this fever by ticks diseasing the calves in a mild way which prevents their ever having another attack. But to immunize northern cattle, they require to be vaccinated with the blood of a sick animal, which produces the disease in mild form, thereby rendering them immune to the disease. Cattle can be vaccinated a time or two without very much risk and at small expense and this should be done before they are taken to infested parts of the country. Cold frosty weather kills the ticks. This disease has been heard of since 1814 and called by many different names and is no doubt caused by an organism which lives within the red corpuscles and breaks them up but how they get there is hard to tell.

INFLUENZA — PINK EYE—EPIZOOTIC — LA GRIPPE. — (See "Horse Department.")

VARIOUS DISEASES.

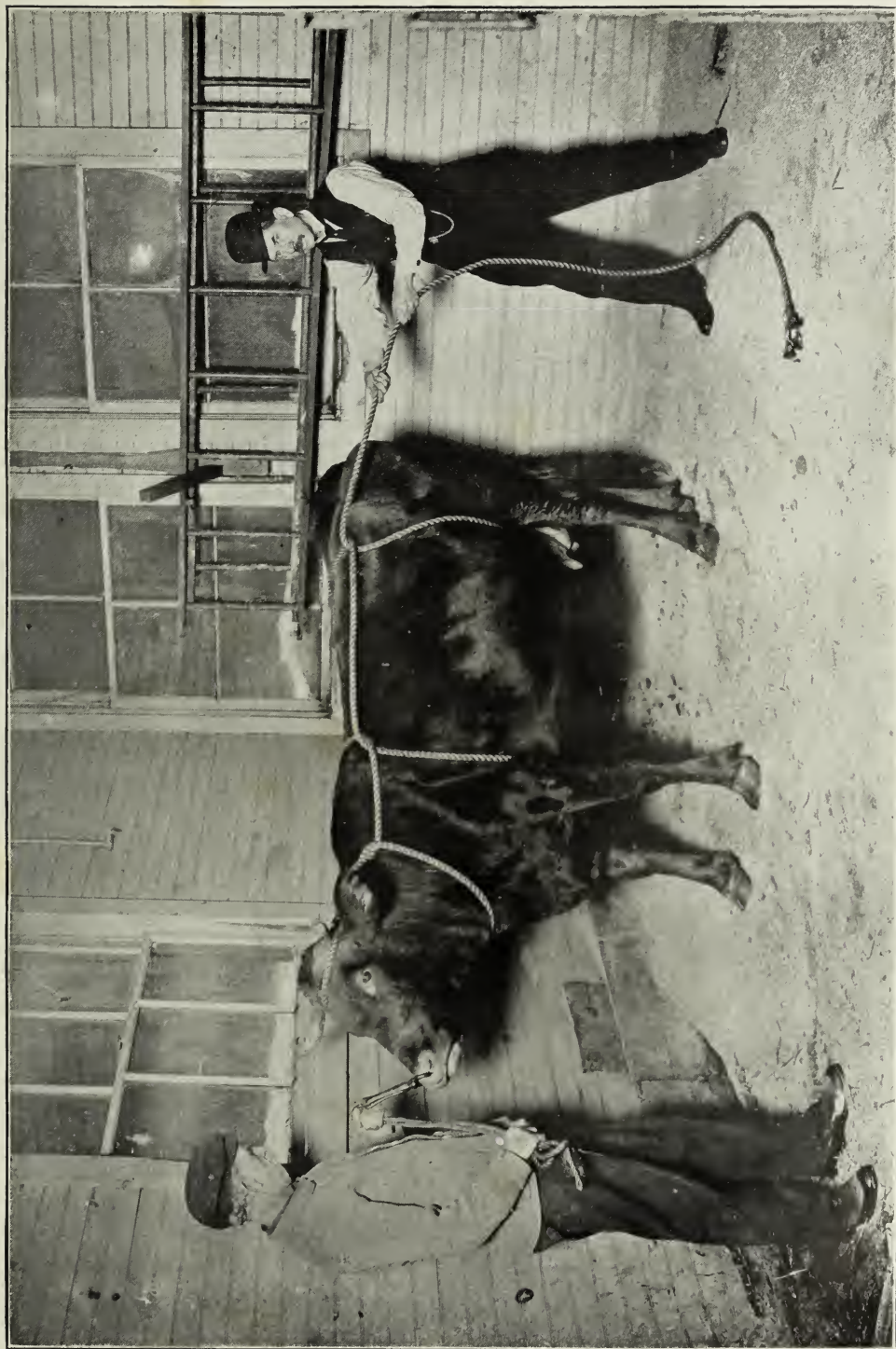
(Including Lump Jaw, Foot-Rot, Founder, Wounds of all Kinds, Screw Worms, Broken Bones, Hydrophobia, Apoplexy, Epilepsy, Dropsy, Rheumatism, Ringing Bulls, Dehorning, Diseases of the Heart, Blood and Veins, Etc.)

LUMB JAW—ACTINOMYCOSIS.—This disease is due to the presence of vegetable parasites which are known by the name "actinomyces." It has been known to affect man, sometimes the horse and other animals, but it generally affects the ox.

CAUSES.—It is always due to a vegetable organism that makes its way into the tissues, producing a lump or tumor on some part of the body, generally affecting the jaw but may affect the tongue and is sometimes found in the lungs. This fungus grows on plants and very often gains entrance to the body through wounds about the head or mouth or even other parts of the body. This disease should not be called strictly contagious for the only way a diseased animal can infect another is by pus dropping on grass, as this fungus seemingly regains vitality and when eaten seems to disease others; therefore, an animal suffering from this disease and discharging pus should not be allowed to run on pasture where other cattle graze.

SYMPTOMS.—Usually the first symptoms are: a refusal of food, an irritation of the tongue, disinclination to masticate food and very often a profuse flow of saliva, a disagreeable odor from the breath and a swelling, such as would result from an injury. When pus comes from the bunch it is usually sticky and contains small hard yellow particles which can be seen readily by spreading on a clean glass. This disease appears to act rather peculiarly for in some cases it progresses rapidly and in other cases quite slowly. To be sure that it is a case of actinomycosis the pus should be examined with a microscope to find the fungus.

TREATMENT.—In a majority of cases, if treated in time, this disease is curable but, if it has become chronic and the bones affected very much, they are cured with difficulty; however, it is well to make the effort. Simple home remedies cut little figure in the treatment of this ailment. From one to four drams of iodide of potassium dissolved in water should be given as a drench twice a day until a perceptible improvement is noticed, then less of the medicine should be given until a recovery takes place. The best external application is red iodide of mercury, one part and lard, four parts, applied every few days as the case demands. I have obtained very good results by cutting the tumor open and applying caustics and there are none better than caustic potash. After the inside of the tumor sloughs out apply either tincture of iodine or iodine ointment. I have also tried some of the lump jaw cures that are on the market and they have given me fairly good results. It is well to keep in mind that this ailment can be communicated to other live stock; therefore, it is often wise to fatten and dispose of them as in the majority of cases the flesh of an animal of this kind is fit for food.



A SIMPLE WAY TO THROW A COW.

Note that but one rope is used.

(Photographed especially for this book.)

PEOPLE'S HOME REMEDIES FOR LUMP JAW.—

1. **Air-Slacked Lime.**—Cut the lump open and put in all the air-slacked lime it will hold. This will eat out the diseased parts and effect a cure.

2. **Iodine.**—The lump should be cut open and cleansed with a solution of one part carbolic acid and twenty parts water and then half an ounce of tincture of iodine should be injected.

3. **Iodide of Potash.**—Give one dram of iodide of potash once a day for ten or twenty days, discontinue for a week and then repeat. The potash should be given in the drinking water. This is one of the most effective remedies known for lump jaw.

4. **Kerosene and Iodine.**—Mix one part of iodine with two parts of kerosene and apply frequently when the lump first makes its appearance.

LUMPS ON THE JAW.—A lump on the jaw is very often caused by a blow or by one animal's hooking another or by being kicked by a horse. The bunch may be actinomycosis (lump jaw), or it may be the result of a diseased tooth or a cap crowding against the cheek and causing an inflammation of the jaw.

TREATMENT.—Try to ascertain the cause and if it is the result of an injury or even if it be incipient lump jaw apply iodine ointment which can be obtained from any druggist. If caused by a tooth, treat as I have suggested elsewhere. When applying iodine ointment or tincture of iodine, daily applications should be made for a few days, then the medicine may be used less frequently.

EXOSTOSIS OF THE JAW.—(See "Horse Department.")

FOOT-ROT—FOUL IN THE FOOT.—This is a diseased condition of the foot showing itself mostly between the toes and in the back part of the heel and in the coronet.

CAUSES.—It is generally caused by stable filth or by some foreign body lodging between the toes or by allowing the toes to grow too long and out of shape. In cattle it is not generally contagious but it frequently is in sheep.

SYMPTOMS.—Generally, the first symptom noticed is lameness. There is swelling of the coronet, swelling between the claws and very often some sloughing and if the case has been neglected it is often deep seated and suppurating under the wall.

TREATMENT.—If you suspect there is pus under the wall, cut through and liberate it, applying peroxide of hydrogen; a few minutes later apply one part carbolic acid and ten parts water, not forgetting the importance of keeping the animal in a clean dry stable. After the foot ceases to discharge pus, apply pine tar and oakum and bandage around the foot to protect it from dirt. Feed the animal on cooling laxative diet and as the animal begins to recover it is not necessary to use the carbolic lotion stronger than one part to thirty of water. I have obtained good results by applying the following lotion:—Dissolve one-quarter pound of sugar of lead and two ounces of carbolic acid in a gallon of water and apply daily. This is hardly active enough, however, for bad cases during the early treatment. If the toes have grown out long they should be shortened. If the feet are much inflamed, poultices will make the animal more comfortable.

PEOPLE'S HOME REMEDIES FOR SORE FEET, FOUL IN THE FOOT OR FOOT EVIL.—

1. **Linseed Oil, Lard and Carbolic Acid.**—Mix one ounce of carbolic acid

with two ounces each of linseed oil and lard. Before applying, the foot should be thoroughly cleaned by drawing a rope between the toes.

2. **Blue Vitriol.**—Pare the hoof and then bathe with a solution of four ounces of blue vitriol in a pint of warm water. Finely pulverized blue vitriol may be applied dry if preferred. This is an excellent remedy for foul foot of cattle.

3. **Butter of Antimony.**—Clean the foot and apply butter of antimony. Repeat in a week or ten days if the first application does not complete the cure. If it makes the foot too sore apply some lard or linseed oil.

4. **Turpentine.**—Thoroughly clean the foot and apply spirits of turpentine. This should be applied early.

5. **Borax, Calomel and Blue Vitriol.**—Mix half an ounce of borax with two ounces each of calomel and blue vitriol and apply twice a week. The foot should be thoroughly cleaned each time before applying.

FOUNDER—LAMINITIS.—This is an inflammation of the sensitive tissues of the foot, usually affecting the front feet but sometimes all four feet.

CAUSES.—It is caused by traveling a long distance on rough, hard roads and by over-feeding and it sometimes follows calving.

SYMPTOMS.—The animal walks sore and is inclined to lie down and when traveling attempts to carry as much of the weight of the body on the hind legs as possible, especially when the forefeet only are affected.

TREATMENT.—Stand the animal in a tub of warm water if occurring in the winter season, or in cold water or wet clay in the summer. Give a full dose of epsom salts, also give a tablespoonful of saltpeter three times a day. When the animal is feverish give ten or fifteen drops of fluid extract of aconite and if in much pain give a teaspoonful of fluid extract of belladonna or a tablespoonful or two of laudanum two or three times a day.

FOOT SORENESS.—This is a very common ailment in cattle and is generally the result of filth, over-feeding or traveling on rough, uneven roads or running in rough lots. Stand in either hot or cold water or poultice the feet with wet clay or apply antiphlogistine. Also apply wet swabs to the hoofs and if you are able to determine the cause, remove it.

LOSS OF HOOF.—The loss of a hoof is usually the result of an accident or injury of some kind, pulling off either or both claws.

TREATMENT.—After applying peroxide of hydrogen cover the foot with pine-tar, covering that with oakum and a bandage. It will not be necessary to dress the foot more than two or three times, providing the foot is clean when first dressed and the coating of tar and oakum is sufficient to protect the foot from wet and dirt. There are many healing remedies that you may have on hand that will answer almost as well as what I have prescribed. It is important to keep the foot clean and free from infection.

SPAVIN IN CATTLE.—This is not nearly so common an ailment in cattle as in horses but work oxen and cows that are obliged to travel on hard roads do sometimes have bone spavin, causing a bony enlargement on the lower and inside part of the hock joint.

TREATMENT.—Rest, blisters and firing, the same as are recommended for horses, are proper treatment for cattle.

SPRAIN OF THE STIFLE JOINT.—(See "Horse Department.")

DISLOCATION OF STIFLE IN CATTLE.—The stifle bone sometimes becomes dislocated in cattle and should be treated the same as for horses. (See "Horse Department.")

SPRAINS.—Sprains of Tendons, Ligaments and Muscles are treated in the "Horse Department."

WOUNDS.—Wounds on cattle should be treated much the same as those on horses; therefore, I suggest that you look up the treatment for wounds in the "Horse Department." However, it is well to keep in mind that every wound should be examined closely at first to ascertain whether or not there is any foreign body in it. If there is, remove it, pour on a small quantity of peroxide of hydrogen or one part of carbolic acid and thirty parts of water or one part of coal-tar disinfectant and thirty parts of water. Or, dissolve one ounce of alum or the same quantity of sugar of lead or sulphate of zinc in a quart of water and apply to wounds two or three times a day. Any of the above home remedies will answer very well. A very good healing powder is made of equal parts of iodoform, powdered alum and boric acid, but remember that for wounds to do well the animal should be kept in a clean place and the wounds should be kept clean and protected from contaminated influences. It is not always necessary to cover a wound with oakum or absorbent cotton or tar bandages but as a rule when they are applied properly a wound heals more rapidly. When it is necessary to stitch a wound it should be done with clean sewing material—silk, linen, catgut or any of the sewing materials that are sold for human practice. Of course you should use the heaviest, or two or three thicknesses and bring the edges of the wound as close and even as it is possible. Take out the stitches as soon as you believe a union of the tissues has taken place.

BANDAGING AND STITCHING WOUNDS.—In case of wounds on the legs a light bandage or a strip of adhesive plaster wound around the leg will hold the edges of a wound together almost as well as stitches. When stitches are required, either silk or catgut should be used; the silk holds better but of course will not be absorbed as catgut will. The silk stitches need to be taken out. (See "Wounds" in both this and the "Horse Department.")

PEOPLE'S HOME REMEDIES FOR SORES AND FOUL FLESH.—

1. Oil of Vitriol.—Cleanse the parts with water and then bathe with half a teaspoonful of oil of vitriol diluted in half a teacupful of water.

SCREW WORMS IN WOUNDS—MAGGOTS IN WOUNDS.—Whenever a wound is neglected during hot weather it is liable to be inhabited by screw worms or maggots. Apply one part carbolic acid and thirty parts water or one part coal-tar disinfectant to thirty parts water or apply peroxide of hydrogen, then apply equal parts powdered alum, oxide of zinc and iodoform. Sometimes, dropping in turpentine not only kills the maggots but stimulates a healthy action. Other fairly good remedies are one part bi-chloride of mercury and five hundred parts water or one part chloride of zinc and five hundred parts water. Or, apply equal parts of iodoform, powdered alum and boric acid. Wounds of this kind should be treated twice a day and should be covered with oakum. In summer apply pine-tar as soon as the sore ceases to suppurate and this will keep the flies away.

AIR UNDER THE SKIN.—Frequently, following a wound, air makes its way into the tissues beneath the skin, giving rise to an enormous swelling. Tapping on the skin with the fingers produces a crackling noise and drum-like sound.

TREATMENT.—Keep the animal quiet and make large wounds through the skin in order to let out the air; also hand rub the parts.

WOUNDS OF THE LIPS.—

CAUSES.—These are caused by coming in contact with nails, barbed wire, splinters on boards and sometimes by blows. I have known of swollen lips being the result of a snake bite.

SYMPTOMS.—External wounds are of course easily seen but the lips may be wounded on the inside by the animal's picking up pieces of glass or foreign bodies that are sharp and uneven; therefore, in making an examination, the inside of the lips should be examined closely.

TREATMENT.—If the lips are only bruised with a dull substance and there is no open wound, apply simple home remedies, such as hot or cold water or one part witch hazel and two parts water. Or, dissolve one ounce of borax in a quart of cold water or put four ounces of fluid extract of arnica into a quart of cold water and apply to the lips four or five times daily. If you suspect that a snake bite is the cause, give not less than one-half pint of whiskey several times a day for a day or two. Nearly all home healing remedies will be found useful in treating wounded lips.

INJURIES TO EYE.—(See "Diseases of Eye and Ear.")

INJURIES TO EAR.—(See "Diseases of Eye and Ear.")

FRACTURES—BROKEN BONES.—A fracture is usually the result of an injury and the proper treatment for such is to place the broken bone in its original position and if held there for a few weeks a bony union usually takes place; however, in old animals this may not be the case and when the bones move and are not kept in place a fibrous union occurs which is not nearly so satisfactory as if a bony union had taken place. There are many ways in which bones may be held in position by bandages of various kinds. The most satisfactory plan is to use prepared plaster of Paris bandages; the directions go with them and they are not expensive. These may be applied to fractures of the limbs. Splints of card board, wood or whale bone wrapped with cotton and held on with bandages do very well. When the animal is kept on foot a temporary sling should be used for a few weeks.

HIP JOINT LAMENESS.—(See "Horse Department.")

HIPPED—FRACTURE OF THE HIP BONE.—

CAUSES.—This ailment is usually the result of an accident by rushing through a narrow door or falling or being kicked, striking the point of the hip and breaking the bone. This kind of a fracture is not very dangerous for either a fibrous or bony union takes place, leaving the point of the hip down and in.

TREATMENT.—Keep the animal quiet in a standing position until the bones unite, which requires four or five weeks. Dissolve one-quarter pound of sugar of lead in a gallon of water, adding eight ounces of fluid extract of opium and apply to sore parts twice a day; or apply spirits of camphor. If the bone does not unite it will perhaps produce an abscess and the detached piece should be removed and the end of the bone made smooth. In some cases it is not necessary to treat them for if the bone is held in position by the muscles they get well without treatment.

BITES OF INSECTS AND SNAKES.—There are too many varieties of insects and too many kinds of snakes for me to speak of each one separately; therefore, I shall give you general treatment for all kinds that have come under my observation.

TREATMENT.—For insect bites apply lead lotion which is made by dissolving one-half ounce of sugar of lead in a quart of water and, if the swell-

ing produces much pain, add one-fourth part laudanum. Or, apply equal parts of aqua ammonia and sweet oil, or some camphorated oil and, if the animal is very dull or dumpish, give some whiskey or alcohol every two or three hours. In case of snake bites, either touch the sore with caustic or the point of a red hot iron. In many cases I have thought that tincture of iodine gave as good results as any drug I had ever used.

HYDROPHOBIA—RABIES.—This is an infectious disease caused by an invisible organism which is transmitted from one animal to another usually by a bite when suffering from the disease or by direct inoculation. This ailment is most common in the dog, perhaps on account of dogs running at large and biting others. The dog shows two forms of rabies—furious and dumb, the dumb being much the more common. In furious rabies the animal seeks a dark place for a day or two, gradually becoming more restless, drinking lots of water, eating sticks, stones and other rubbish and some dogs travel many miles from home and return to die from exhaustion or paralysis after biting many animals. During their journey they are far more likely to bite other animals than man. In the dumb form the animal seeks dark places, becoming nervous. The throat and lower jaw become paralyzed, the lower jaw dropping and remaining open and the voice changing from a bark to a howl. When in this condition they are unable to bite a person; however, they sometimes change to a more furious state and bite. In the horse the symptoms are restlessness, unusual violence, kicking and biting and very often the showing of sexual excitement. I have known horses with rabies to eat a hind leg almost completely off. The disease usually develops in from eight to twenty-one days; however, it may not develop for several months. It usually runs its course in from two to eight or ten days and terminates in death. As this disease advances cattle become unusually excitable and vicious and suffer from spasms and appear to suffer a great deal of pain during the later stages of the disease and show partial paralysis of the hind quarters.

TREATMENT.—As there is no curative remedy the treatment should be preventive. If bitten by a dog, burn the wound with a red hot iron, or with caustic to destroy the infection. The preventive treatment used in man is far too expensive to be used on animals.

CEREBRO-SPINAL MENINGITIS.—(See "Horse Department.")

VERTIGO—BLIND STAGGERS—FALLING FITS.—(See "Horse Department.")

APOPLEXY.—This ailment is usually the result of congestion or stagnation of blood in the brain or of rupture of some small blood vessel which causes a clot that produces pressure on a portion of the brain.

CAUSES.—The causes are high feeding and under exercising; or, exertion in excessively hot weather, especially if the animal is very fleshy.

SYMPTOMS.—Apoplexy develops suddenly, the pupil of the eye is always dilated and the animal breathes heavily. In some cases only a portion of the body is affected.

TREATMENT.—In fleshy animals I believe in blood-letting, taking away not less than two gallons. Give from one to two ounces of bromide of potash every two hours or the same quantity of hypo-sulphite of soda and as a rule from one to two pounds of epsom salts should be given to open the bowels. If the animal is in a comatose condition, pour the medicine through a rubber tube with a funnel for there is danger in giving it as a drench out of a bottle.

SUNSTROKE—HEAT EXHAUSTION.—(See "Horse Department.")

LOCKJAW—TETANUS.—(See "Horse Department.")

CHOREA.—(See "Horse Department.")

FITS—EPILEPSY.—No person has ever been able to tell what causes epileptic fits; however, they are claimed to be caused by some germ or organism or diseased condition of the blood. They follow teething, worms, a torpid condition of the liver and chronic indigestion.

SYMPTOMS.—The disease sets in suddenly followed by a convulsive spasm.

TREATMENT.—Try to learn the cause and remove it by treating for such an ailment. If worms are the cause, treat for them and if the teeth, treat them and if the bowels are costive, give laxatives. If caused by chronic indigestion, treat the stomach and liver.

PARALYSIS.—(See "Horse Department.")

DISEASE OF THE SPLEEN.—It is so puzzling to tell when an animal suffers from disease of the spleen that it is hardly worth considering as a cattle ailment. Therefore, about all we can do is to treat what symptoms they show and feed cooling, laxative food, keeping the bowels and kidneys active. It is also important to exercise the animal some every day.

MYELITIS—INFLAMMATION OF THE SPINAL CORD.—(See "Horse Department.")

DROPSY OF THE BELLY—ASCITES.—Dropsy is not a disease but a result of other ailments such as peritonitis, diseases of the liver and debility following a lack of proper nutrition.

SYMPTOMS.—There is a general dullness; an increase of size in belly, especially the lower part; a paleness of the mucous membrane of the mouth and eye; a loss of appetite and an irregular rumination of food. By tapping the abdomen with the ends of the fingers a dull sound is produced and if the hand is passed into the abdominal cavity through the bowel, water can be felt; besides, the fluctuation can sometimes be determined by pressing the right flank. When there is dropsy, the shape of the lower portion of the belly seems to differ from its shape in all other ailments.

TREATMENT.—Feed a good quality of nutritious food and give one ounce of ground gentian, one dram of ground nuxvomica and one-half ounce of nitrate of potash at a dose in feed three times a day. The bowels and kidneys should be kept active. When the effusion is great I never hesitate to tap the animal, using, of course, a trocar and canula. The opening should be made four or five inches back of the navel on the under side of the abdomen. In performing this operation the trocar must be pushed only through the abdominal wall for if pushed further you may puncture a bowel and cause the death of the animal.

TAPPING THE BELLY.—This is done to empty the abdominal cavity of water as in cases of ascites. Make an incision through the skin just back of the navel and insert the trocar, leaving the canula in until the fluid all runs out, then withdraw the instrument. It is sometimes necessary to operate more than once. Be sure that the instrument is clean before it is used.

WATER IN THE CHEST—HYDROTHORAX.—This is not a disease but is a result of other ailments. An accumulation of water takes place in the chest and this condition is generally found following a bad case of pleurisy.

SYMPTOMS.—Whenever water commences to accumulate in the chest the worst symptoms of pleurisy seem to somewhat subside. Here is where the veterinarian and stockman are often deceived but after a short time the

animal is worse and soon shows it. The nostrils flap, breathing is labored and the flanks heave and the legs and chest become dropsical. By listening, a murmur can be heard in the bottom of the chest and the heart can often be heard splashing in water. Percussion on the ribs makes a very dull sound if the tapping is low down. The pulse is quick and weak. When death takes place it is caused by crowding the lungs to the upper part of the chest, thus causing suffocation.

TREATMENT.—Give three drams of acetate of potash and two drams of fluid extract of digitalis at a dose three times a day; or give one dram of iodide potassium at a dose three times a day; or give a tablespoonful of powdered saltpeter at a dose two or three times a day. It is well to keep the bowels and kidneys moderately active, also groom the body twice a day. If the animal's appetite is poor give two tablespoonfuls of ground gentian, two tablespoonfuls of ground ginger and a teaspoonful of ground nux vomica at a dose three times a day. This will improve the appetite. Be sure to furnish the patient with nutritious food such as well-cooked oatmeal gruel and eggs or milk and whiskey to keep up the strength.

TAPPING THE CHEST.—This is done in case of an excessive accumulation of water in the chest. A trocar and canula such as are used in tapping horses should be used. However, a veterinarian is the proper person to do it for if an inexperienced person attempts it he may get into trouble.

RHEUMATISM.—This is a disease that is by no means well understood; however, it is doubtless the result of too much acid in the system, which has a tendency to produce inflammation and pain of some part or parts of the body, quite often affecting the joints, sheaths of the tendons and synovial membranes. It is known by its changing from one part of the body to another. The acute form is the most common, causing swelling and sometimes suppuration and a discharge of synovia from the opening. In the chronic form the joints stiffen, become diseased and sometimes become perfectly stiff. In some cases the pleura and heart are involved, resulting in death. In other cases the muscles are affected and remain so, causing them to contract. A shifting lameness with joint swellings indicates rheumatism. The bowels are generally costive and the coat dry. The joints may suppurate.

TREATMENT.—Good care is the treatment. Keep the bowels open and the kidneys active; also, keep the animal warm and apply mustard and water or some good home liniment such as is made by mixing equal parts of turpentine, aqua ammonia and sweet oil. Give two drams of salicylate of soda three times a day or give a tablespoonful of powdered saltpeter at a dose in feed or water three times a day. Any one of the above remedies do good in such cases. Rubbing with spirits of camphor, alcohol or oil of mustard partially relieves the pain.

HOLLOW HORN AND WOLF IN THE TAIL.—These are common terms made use of by uninformed persons to denote a diseased condition of the blood when they are not able to tell what ails the animal. It is an imaginary disease. The hollow condition of the horn exists in nearly all cattle, especially in thin ones and boring a hole in the horn and filling it with pepper and salt never did any good but often harm. Splitting the tail and using the same remedy cannot remedy tail ailments if the animal has any. Generous feeding and giving a teaspoonful of ground nux vomica, a teaspoonful of sulphate of iron and a tablespoonful of ground gentian in the feed three times

a day will help tone up the system. Never allow any person to make you believe there are such ailments in cattle as hollow horn or wolf in the tail.

PERICARDITIS.—This is an inflammation of the membrane inclosing the heart and is very often the result of other ailments such as pleurisy, pneumonia or rheumatism and it may also follow other constitutional diseases. It is true that this disease may arise independent of any other, the result of exposure to cold, damp weather.

SYMPTOMS.—It usually sets in with a light chill followed by slight fever, producing dullness and a quick and somewhat irregular pulse. The legs are usually cold, the respirations quicken, and when the left side is tapped with the finger it produces pain. In the secondary stages the legs stock and a swelling appears under brisket and lower part of belly.

TREATMENT.—Keep the animal in a quiet, comfortable stable, hand rub the legs and clothe the body warmly. Give easily digested food in moderate quantities several times a day. In the early stages of this ailment give one-pound doses of epsom salts daily until the bowels move freely and if the temperature is high give 25 drops of tincture of aconite every three hours for a day or two, then give one dram of fluid extract of digitalis and one dram of fluid extract of nux vomica three times a day. Or, give a tablespoonful of powdered saltpeter and two tablespoonfuls of baking soda at a dose in feed three times daily.

PLETHORA.—This is a rich condition of the blood that interferes with circulation; consequently, poisonous materials are not eliminated from the system and, of course, this leads to many congestive and inflammatory ailments.

CAUSES.—Feeding too much rich nutritious food such as oil meal, corn, oats, barley or rye, without the animal's getting enough exercise, also forcing the growth of the animal beyond a certain point are causes. Being kept in too warm a stable and breathing impure air are other causes.

SYMPTOMS.—There is an unusually thrifty condition, the animal laying on flesh rapidly but showing slight fever at times followed later by congestion and later on by inflammation.

TREATMENT.—Give a cathartic of epsom salts or linseed oil and reduce the food supply. Instead of grain, feed some vegetables and well salted bran mash; also, give one-half ounce of saltpeter at a dose in the feed two or three times a day. Do not forget that exercise is one of the best remedies for plethora.

ANEMIA.—

CAUSES.—This is a condition of the blood just the opposite to plethora and is generally brought on by want of sufficient food or fresh air. Exposure to cold and storms, lice or other parasites, also indigestion and other debilitating diseases may lead to anemia. Dropsy or purpura hemorrhagica may follow cases of this kind or they may end in rheumatism.

SYMPTOMS.—The animal has pale membranes, is unthrifty, weak, dull and always inclined to stock and it may be lousy.

TREATMENT.—If lousy, apply an infusion of stavesacre seeds, which is prepared by boiling one ounce of crushed seeds in a quart of water, then add water to make one quart before using. Give mineral tonics such as sulphate of iron in teaspoonful doses three times a day; or give a teaspoonful of liquid chloride of iron at a dose three times daily. Any good home tonics, such as quinine, gentian, quassia, ginger, cinchona or Fowler's solution are

proper remedies but never forget the importance of plenty of good food. Keep the bowels and kidneys active.

PURPURA HEMORRHAGICA.—This is a specific blood disease seldom affecting cattle but most commonly affecting horses.

SYMPTOMS.—It is generally due to an impoverished condition of the blood which oozes through the walls of the blood vessels, causing extensive swellings of the head and limbs and under the belly. It often follows debilitating diseases or exposure to cold storms; it also follows exhaustion and usually comes on suddenly. The swelling pits on pressure, the mucous lining of the nose and mouth is covered with red or purple spots and sometimes abscesses form, causing death.

TREATMENT.—Place in a dry, clean, well-ventilated stable; feed plenty of rich nourishing food; also give thirty grains of quinine and two drams of tincture of chloride of iron in three ounces of raw linseed oil every four hours for two or three days. Hot blankets are helpful in cases of abdominal pain. The serum treatment has given me fairly good results in the majority of cases where I have tried it, but of course it is more expensive than drugs. When it is employed give it early and in full doses. Lead lotions or vinegar and water applied to the swellings on the head help to keep the swelling in check.

BLOOD POISONING—PYÆMIA—SEPTICÆMIA.—This is a condition that generally results from absorbing into the system some sort of poisonous matter from a suppurating surface or ulcer or from picking up pus or germs of some kind.

SYMPTOMS.—There is a rise in temperature, loss of appetite, quick breathing, loss of flesh and, in serious cases, delirium. There may be an external abscess, or perhaps one situated out of sight, which causes all the trouble.

TREATMENT.—Ascertain the cause and if it is an abscess open it and wash out with one part peroxide of hydrogen and three parts water, applied very slowly; ten minutes later apply one part carbolic acid and thirty parts water and repeat three times a day. Give thirty grains of quinine and half a teacupful of whiskey four times a day. If the bowels are costive give epsom salts or raw linseed oil to move them, also give a tablespoonful of powdered saltpeter at a dose twice a day.

INFLAMMATION OF THE VEINS—PHLEBITIS.—This condition of the veins is usually the result of infection by an animal's rubbing a wound where the vein has either been punctured or exposed.

SYMPTOMS.—When inflammation follows the operation of blood-letting the wall of the vein usually thickens and the wound discharges a watery fluid and when the pin is taken out it can be noticed that the skin has not united. This inflammation may extend along the vein a considerable distance; also, an abscess may form causing the formation of pus which always interferes with the circulation of blood through the vein. But cattle have an accessory jugular vein which carries on the work if the other becomes clogged.

TREATMENT.—Same as for Horses.

HOW TO RING A BULL.—First of all you must secure the bull by placing him in stocks or stanchion, throwing him or placing him in a narrow stall. Tie him short, place a small block of wood in one nostril, set the punch in the other and strike it a blow. This makes a hole through the cartilage; then place the ring and set the screw and your work is completed. Some

stockmen burn a hole through the nose partition with a pointed iron when at white heat; this can be done quickly if you have an assistant to help.

BLEEDING—BLOOD-LETTING.—Nearly all ancient writers on veterinary subjects were inclined to recommend blood-letting for common ailments of live stock; however, the practice has largely gone into disuse, not only in human practice but in veterinary practice also.

DEHORNING.—In young calves apply caustic potash as soon as the horn bud can be felt and be sure to apply it to the whole horn for if this first application is thorough it will prevent the horn's ever growing. In making this application do not get the caustic too wet for, if so, it may burn the healthy parts and perhaps some of it get into the eye. In removing the horns from an adult, place the animal in a stanchion or stocks or tie the head firmly and short to a post. Snap a nose ring into the nose, pull the head round to one side, use the dehorning shears and then apply one part carbolic acid and ten parts pine tar, covering it with either oakum or cotton. To stop bleeding apply Monsell's solution of iron or use a red hot iron or tie a silk thread about the artery. Sometimes I take hold of the artery with the forceps and twist it. This stops the blood very quickly. In some cases pus forms, and if this is the case apply peroxide of hydrogen and dust on equal parts of iodoform, powdered alum and tannic acid.

PEOPLE'S HOME REMEDIES FOR KILLING HORNS ON CALVES.—

1. **Caustic Potash.**—As soon as the horn starts it should be rubbed with caustic potash.

DISEASES OF THE BONE.—(See "Horse Department.")

INFLAMMATION OF THE BONE—OSTITIS.—(See "Horse Department.")

OPEN JOINT.—(See "Horse Department.")

CAPPED ELBOW—ELBOW TUMOR.—(See "Horse Department.")

COLD ABSCESS.—(See "Horse Department.")

INFLAMMATIONS.—(See "Horse Department.")

CHILLS.—(See "Horse Department.")

GOITRE—BRONCHOCELE—ENLARGEMENT OF THE THYROID GLAND.—(See "Horse Department.")

TUMORS.—(See "Horse Department.")

RICKETS.—(See "Horse Department.")

IMPURE BLOOD—BAD BLOOD.—(See "Horse Department.")



DR. FAIR GIVING MEDICINE TO A SHEEP.

Raise the nose but a little for if raised too high the medicine will go down the windpipe into the lungs and cause broncho-pneumonia and finally death. Many sheep are killed each year by holding the nose too high while giving medicine.

(Photographed especially for this book.)

SHEEP.

DISEASES OF THE DIGESTIVE ORGANS.

(Including Colic or Stretches, Bloating, Diarrhea in Lambs, Constipation, Stomach Worms, Fluke Worms, Nodular Disease, Choking, Etc.)

COLIC—STRETCHES.—

CAUSES.—Drinking too much ice cold water and eating too much badly cured fodder or grain and eating frozen vegetables or grass are the causes of colic or stretches.

SYMPTOMS.—The symptoms are: getting up and down frequently, stretching as if in pain, striking the belly with the feet and refusing to eat.

TREATMENT.—Any good home colic remedy is all right, or give a teaspoonful of essence of peppermint, a teaspoonful of ginger and twenty drops of laudanum at a dose every hour or two until the pain ceases. Apply mustard and water to the lower part of the abdomen and it will relieve the pain. If the bowels are not moving freely give epsom salts to open them.

PEOPLE'S HOME REMEDIES FOR COLIC OR STRETCHES.—

1. **Soda and Ginger.**—In water as a drench give a dram each of common baking soda and ground ginger. If the first dose does not effect a cure a second dose may be given in an hour. If the second dose is necessary it is well to give five ounces of raw linseed oil.

PEOPLE'S HOME REMEDIES FOR LAMB CHOLERA.—

1. **Ether and Milk.**—Mix one-fourth ounce of sulphuric ether with two ounces of warm milk and give at a dose. Repeat in two hours if necessary. This remedy can be depended upon to cure lamb cholera.

HOVEN—BLOATING—TYMPANITES.—These ailments are the results of fermentation of food that the sheep have eaten, causing distension of the stomach and bowels.

CAUSES.—Drinking too much very cold water, eating frozen vegetables or grass, also eating too much young grass are the causes.

SYMPTOMS.—The left side is puffed out and if tapped it will sound drum-like. The sheep is always uneasy, getting up and down and showing symptoms of suffering considerable pain.

TREATMENT.—Give a dessert spoonful of aromatic spirits of ammonia, one-half ounce hypo-sulphite of soda and a teaspoonful of tincture of ginger at a dose in a pint of cold water every two hours until pain ceases and the bloat goes down. If the bowels are costive give three ounces of epsom salts in one-half pint of water, adding a little ginger. If you believe there is danger of the stomach or bowels bursting, puncture the stomach and allow the gas to escape. The wool should first be cut off and some disinfectant applied to the skin. A clean trocar and canula should be used. The place to puncture is at the most prominent point of the bloating. Pull out the trocar but leave the canula in until all the gas is out.

PEOPLE'S HOME REMEDIES FOR BLOATING.—

1. **Soda, Ginger and Ammonia.**—With a pint of water mix one dram each of common baking soda and ginger and eight drams of aromatic spirits of ammonia. This is one dose and may be repeated in an hour if necessary.

IMPACTION OF THE RUMEN.—

CAUSES.—This comes from eating too much food that the sheep is not accustomed to having and eating large quantities of indigestible fodder, grain or grass. Badly cured clover and too ripe timothy are also causes of impaction.

SYMPTOMS.—There is loss of appetite, labored breathing and few if any bowel movements. The sheep does not ruminate and by pressing the left side with the hand you will feel a dull hard substance.

TREATMENT.—The first point to consider is how to unload the stomach and bowels quickly and not hurt the sheep. Give four or five ounces of epsom salts, one dram of tincture of ginger and ten drops of tincture of nuxvomica in one-fourth pint of water as a drench. This should move the bowels. If it fails, give raw linseed oil or some more of the salts. Injections of soap and water should be used. If the sheep is much bloated give some aromatic spirits of ammonia, peppermint and ginger or any good home remedy for flatulent colic.

ENTERITIS—INFLAMMATION OF THE BOWELS.—Enteritis is quite a common sickness in sheep.

CAUSES.—It very often follows impaction or colic and is also brought on by exposure to cold and from eating the wrong kind of food, or it is sometimes the result of giving irritating drugs.

TREATMENT.—Whenever the abdominal pain is continuous instead of spasmodic you can safely say it is inflammation of the bowels and not colic. Apply mustard and water to the abdomen twice a day. Also give a teaspoonful of laudanum, twenty drops of fluid extract of belladonna, four drops of tincture of aconite and eight or ten ounces of raw linseed oil at a dose every two hours until pain ceases. Also give two grains of calomel, one dose only.

DIARRHEA IN LAMBS.—

CAUSES.—If every ewe's udder could be washed clean just before the young lambs suck, fewer lambs would have diarrhea and if the lambs' first milk allowance could be somewhat limited, they would have less bowel trouble; besides, young lambs very often chill and this produces bowel trouble.

TREATMENT.—The lamb should be given a small dose of castor oil or sweet oil with a few drops of tincture of ginger or a teaspoonful of whiskey or three drops of tincture of opium (laudanum) and, if necessary, give a few drops of tincture of rhubarb, spirits of camphor and ginger or laudanum with some whiskey. Treat an ailment of this kind in lambs just as if treating children and you will be successful in relieving them. I have obtained good results by keeping the lamb perfectly quiet and changing its food and giving one drop of creosote and three drops of fluid extract of cinnamon in some of the mother's milk three or four times a day.

DYSENTERY.—Dysentery is caused by an inflammation of the mucous membrane of the bowels. It is generally the result of neglected cases of diarrhea or eating bad food, which brings on irritation of the bowels. It also follows giving too much cathartic medicine at a time and too often.

SYMPTOMS.—There is some fever and loss of appetite and the bowel movements are liquid and tinged with blood and have a bad odor.

TREATMENT.—In the treatment of dysentery it is generally good practice to give two or three ounces of castor oil or sweet oil to clear out the stomach and bowels. Also give a teaspoonful or more of tincture of opium (laudanum), a teaspoonful of tincture of ginger and the same quantity of tincture of catechu at a dose in a little warm water as a drench every two or three hours until the bowel discharges lessen. It is always a good plan to give preparations of iron for a few days. The sulphate of iron is the least expensive and one-third of a teaspoonful given at a dose two or three times a day in feed will act both as a tonic and bowel astringent. It is also important to feed gruel for two or three days instead of whole grain or dry fodder.

CONSTIPATION.—

CAUSES.—Constipation comes from milking the ewe before she lambs. The milk then does not possess the same laxative properties which it would if she had not been milked before lambing time. When the lambs are fed cow's milk without its being diluted with water or sweetened, constipation is likely to be the result. In lambs it is no doubt often the result of keeping the ewes in a constipated state for some time before lambing. It is a good plan to have the bowels open at lambing time and then your lambs will do better.

SYMPTOMS.—The lamb bloats somewhat, is slightly distressed and strains to move its bowels but fails in the effort. The first passage is generally waxy and adheres to the walls of the bowel, making it almost impossible for the weak young lamb to force the plug out; besides, the bowel seems to be almost closed.

TREATMENT.—The first step is to use some sweet oil, raw linseed oil, soap, vaseline, fresh butter, or lard. Also give the lamb a small teaspoonful of sweet oil at a dose two or three times a day until the bowels move easily.

PEOPLE'S HOME REMEDIES FOR CONSTIPATION IN LAMBS.—

1. **Preventive.**—For two or three days after lambing give the ewe each day a warm mash made of a pint of bran with a tablespoonful of salt added. This will prevent constipation in the lamb.

STOMACH WORMS.—Stomach worms trouble sheep more than the breeder is inclined to believe; but, of course, if they are not numerous the breeder may never know how much they bother the sheep. Lambs are more often affected than old sheep.

SYMPTOMS.—The sheep that has stomach worms usually eats plenty but loses flesh and becomes unthrifty. The bowels are generally too loose but the sheep does not appear sick. The stomach worm is about $\frac{3}{4}$ of an inch long and is most often found in the fourth stomach of lambs and sheep. It is not unusual to find a whole flock afflicted and sometimes it is necessary to treat the whole flock.

TREATMENT.—The quickest and most satisfactory results are obtained by giving three ounces of a solution made by adding one part of coal-tar creosote to ninety or one hundred parts of water. Give a dose twice a week for two weeks. Or, give a dessert spoonful of gasoline in three ounces of sweet milk twice a week for two weeks, or give a teaspoonful of turpentine in three ounces of sweet oil once a week for three weeks. Feed the sheep one part of powdered sulphate of iron in thirty parts of salt once a week. This will help your flock. It is also important to feed plenty of grain at such times for the sheep are generally run down and need building up.

PEOPLE'S HOME REMEDIES FOR WORMS.—

1. **Salt and Sulphur.**—Mix one part of sulphur with ten parts of salt and keep before the sheep all the time and they will not be troubled with worms.

2. **Salt and Turpentine.**—Keep salt constantly before the sheep and frequently sprinkle a few drops of turpentine over it. This will prevent worms and ticks.

3. **Coal-Tar Creosote.**—Mix coal-tar creosote with thirty parts of water and give one tablespoonful. Repeat this dose in 24 hours.

4. **Milk and Gasoline.**—Mix one part gasoline with ten parts of milk and give a tablespoonful twice a day for two or three days.

PEOPLE'S HOME REMEDIES FOR STAGGERS OR LOSS OF APPE-TITE.—

1. **Turpentine.**—If the sheep has the staggers give it a teaspoonful of turpentine. The dose seldom has to be repeated.

TAPEWORMS.—Tapeworms are more common in sheep in some localities than in others. They vary in length from five to twenty feet. They are perhaps one-twentieth part of an inch wide at the head and about $\frac{1}{2}$ inch wide at the tail. They are of a white color and are generally found in the small intestines.

SYMPTOMS.—Sheep that have tapeworms usually scour, become bloodless, have a white skin, show weakness and great emaciation and sometimes die. The eyes are dull. The appetite is good but the sheep fails to thrive. By watching the excrement, joints of the worm may be discovered.

TREATMENT.—Get the stomach and bowels empty. Give a teaspoonful of powdered kamala and a teaspoonful of oil of male fern in 3 ounces of sweet oil as a drench twice a week until the tapeworm comes away. Another very good remedy is two drams of kamala given in one ounce of castor oil on an empty stomach. When treating for tapeworm be sure to fast the sheep to have the stomach and bowels empty. In order to know if your treatment proves effective keep them in a barn by themselves and examine their evacuations closely and try to find the head of the tapeworm. If you have never drenched a sheep before—let him stand in a natural position, avoid holding the head too high and pour the medicine into the mouth slowly for fear a portion of it will pass down the windpipe. If taken slowly it generally passes into the fourth stomach where it should go.

SHEDDING TEMPORARY TEETH.—Between one and two years of age the sheep sometimes have trouble in shedding some of their milk teeth. When they do not eat well but show no symptoms of sickness, examine their teeth and you will perhaps find a cap that requires removing and, if so, do not hesitate to pull it out with a pair of pincers and the sheep will eat better at once.

DISEASED TEETH.—It is very often necessary to pull a few remaining front teeth in sheep after they have shed some of them. By so doing the gums come together better than if these teeth were left in. The front teeth of sheep seem to loosen and give out first.

FLUKE WORMS—FLUKE DISEASE—LIVER-ROT.—This affection is a very destructive ailment of sheep and is determined by the presence of flat-like parasites in the gall ducts. These parasites lay eggs in the gall ducts and are passed out of the body and if deposited on certain damp lands they soon multiply and infect all the sheep that graze on such land.

SYMPTOMS.—The sheep may thrive very well for a few weeks but soon

begin to lose flesh and grow weak rapidly. The skin becomes soft and is always pale and the eyes become a sort of yellow color. The wool drops out easily and the sheep become dropsical and if the dung is examined large numbers of microscopic eggs are readily seen.

TREATMENT.—Drugs cut very little figure in the treatment of liver-rot when many parasites have gained access to the system. The most important step is to remove the sheep to a high and dry pasture for if kept on a wet low one the whole flock will die. By feeding plenty of salt and draining your low wet pastures you will obtain better results than by any other means. Keeping the sheep off the infested fields at night and until all the dew has dried off the following morning will go quite a ways toward lessening the death rate in your sheep, but of course an infested pasture should be abandoned until the parasites die and sheep should never be turned into any kind of a meadow that is not high and dry. It is a pretty good plan to feed diseased sheep some of the following compound. Take powdered gentian, powdered anise seed, powdered sulphate of iron and common salt, equal parts by weight, giving $\frac{1}{2}$ a teaspoonful at a dose to each sheep every day. Owing to the rapid spread of this ailment it is sometimes good judgment to destroy sheep and abandon the meadow for a year in order to stamp it out. Their bowel discharges should be examined microscopically by a person who can tell when the liver fluke parasite is present.

PEOPLE'S HOME REMEDIES FOR FLUKE WORMS.—

1. **Sulphur, Salt and Ashes.**—Keep before the sheep constantly a mixture of equal parts of sulphur, salt and wood ashes. This will keep them in good condition and prevent their being troubled with the fluke worm.

CHOKING.—

CAUSES.—Sheep are most often choked by eating vegetables that have not been sliced properly or by eating dry meal too fast.

SYMPTOMS.—When a sheep is choked it froths at the mouth, usually bloats some, is unable to eat and sometimes has a spasm of the muscles of the neck.

TREATMENT.—An effort should be made to assist them in swallowing the obstruction and this is best done by giving them oil or grease, and fifteen drops of laudanum or fluid extract of belladonna should be added. It is often necessary to pass a probang; or, a rubber tube may be run down the throat. It must not be forgotten that the throat and gullet are easily injured; therefore, care must be taken not to puncture them. After a choke feed gruel or wet mash for ten days.

NODULAR DISEASE.—Nodular disease is quite prevalent all over this country and is what butchers and sheep raisers call "knotty guts" and is quite unlike all other ailments of sheep. The disease is caused by a small worm from one-half to one inch in length and it seems to be an American species for sheep seem to be free, or almost free, from this disease in Australia and Germany. On examination the walls of the intestines are found covered with small nodules filled with a greenish pus. These nodules are caused by a small worm about the size of the stomach worm or smaller but it is not the adult worm but its embryo that really produces this trouble. The way this disease is spread is by allowing diseased sheep to graze on land that is used later by sound sheep. Preventing the lambs from grazing behind their mothers will help prevent their becoming diseased. It is the older sheep that are most

affected with this disease but lambs frequently have a few nodules but not enough to do much harm.

SYMPTOMS.—The most noticeable symptoms are much the same as those presented in stomach worms and many times a correct diagnosis can not be made until after death.

TREATMENT.—When in the advanced stages nothing can be done that seems to cure nodular disease in sheep. Three ounces of a one per cent. solution of coal-tar creosote, or a teaspoonful of gasoline in four ounces of sweet milk, or two ounces of sweet oil once a week for three weeks is supposed to help them. Also, giving from fifteen to twenty-five grains of sulphate of iron at a dose in feed daily will help them. Plenty of good feed and salting them well, at the same time giving tonics, are beneficial.

By inspecting the intestines of sheep at the different slaughtering establishments of this country and talking with both the United States and City Meat Inspectors I find that nearly all the sheep that are slaughtered show a few nodules on the bowels which could have done no harm; but when they have a great many their bowels are irritated, digestion interrupted, and the animals grow weak.

DISEASES OF THE RESPIRATORY OR BREATHING ORGANS.

(Including Catarrh, Sore Throat, Distemper, Bronchitis, Filaria Bronchitis and Pneumonia.)

CATARRH—COLD IN THE HEAD.—Catarrh is an inflammation of the mucous membrane that lines the nasal and upper air passages.

CAUSES.—During the washing season and following the shearing of sheep they are quite likely to suffer from cold in the head. It is also caused by exposure in wet weather, and it also follows exposure to too much dust as when traveling over dusty roads.

SYMPTOMS.—There is a discharge from the nose, some coughing, sneezing and some loss of appetite.

TREATMENT.—If it is possible to find out the cause, do so, and remove it, for this will do much for your sheep. Keep them in a dry comfortable place, feed them well, keep their bowels open and give each sick one $\frac{1}{4}$ teaspoonful of sulphate of iron, $\frac{1}{2}$ teaspoonful of gentian root (ground or powdered), one-fourth of a teaspoonful of flower sulphur and $\frac{1}{2}$ teaspoonful of powdered charcoal at a dose in feed or as a drench twice a day. A very good condition powder to give sheep that have catarrh is made of powdered sulphate of iron, gentian, ginger, fenugreek and baking soda; use equal parts of each by weight and give one-half teaspoonful to each sheep at a dose two or three times a day. Feed some vegetables and keep their bowels open.

SORE THROAT.—

CAUSES.—Exposure to cold rain or snow storms, cooling the body suddenly, being in dust or being stabled in foul filthy barns are some of the most common causes of sore throat in sheep.

SYMPTOMS.—There is a poking out of the nose and soreness of the throat and when pressure is applied there is generally some coughing. Usually some of the water returns through the nose when they drink.

TREATMENT.—Apply equal parts of turpentine, aqua ammonia and either sweet oil or raw linseed oil to the throat once a day or you may apply any good home liniment or apply one part kerosene and four parts of lard. Steam the head with creosote or carbolic acid and hot water twice a day. Also give two tablespoonfuls of the following gargle at a dose three times a day. Dissolve two drams of chlorate of potash in a pint of water and give according to above directions.

PEOPLE'S HOME REMEDIES FOR SORE MOUTH.—

1. **Turpentine and Sweet Oil.**—Without raising the sheep's nose, pour one part turpentine and six parts sweet oil over the nose and mouth. Also mix some salt and turpentine with bran and feed to those affected.

DISTEMPER.—Distemper in sheep is a disease very much like distemper in horses and canine distemper in dogs and when a recovery does not take place in two or three weeks it becomes malignant and not easily cured.

SYMPTOMS.—This disease is usually preceded by a chill or chilly feeling and is followed by some fever, a quickened heart action and some nasal

discharge which soon thickens and sticks to the nostrils. When the disease becomes aggravated, the discharge is thick and mixed with blood and there is much prostration and the pulse is weak and breathing is difficult; they will then die if not relieved soon.

TREATMENT.—A change of not only food but air is of great importance in getting them well. They should be well fed on grain, clover hay, vegetables and grass if possible. Give a teaspoonful of the following compound powder at a dose in feed or water as a drench two or three times a day. Mix gentian root (powdered), ginger, granulated carbonate of ammonia and charcoal. If they cough much give ten drops of tincture of opium, ten grains of muriate of ammonia and ten drops of tincture of lobelia at a dose in feed or water twice a day. It always helps them to steam the head, adding a little creosote or carbolic acid to the hot water and this should be done daily. Their noses should be washed out with weak salt-water.

BRONCHITIS.—Bronchitis is an inflammation of the air passages of the lungs.

CAUSES.—Exposure to storms and dust; the presence of filaria, or a small thread-like worm, in the bronchial tubes and inhaling irritating gases are causes of bronchitis. It is also caused by improper drenching of sheep when some of the medicine goes down the windpipe instead of the gullet.

TREATMENT.—Keep the animal in a comfortable pen free from dust. Feed bran mash, vegetables or grass. Apply liniment to the chest. Give ten drops of laudanum, ten drops of fluid extract of belladonna and forty drops of sweet spirits of nitre in three ounces of cold water as a drench three times a day. It is helpful to give some whiskey, eggs, milk and oatmeal in the later stages of this ailment, especially when the sheep are weak.

FILARIA BRONCHITIS.—

CAUSES.—Filaria bronchitis is the result of small slim worms inhabiting the bronchial tubes, thereby setting up irritation.

SYMPTOMS.—There is always loss of appetite, rubbing of the nose and quick breathing. Sometimes there is looseness of the bowels and generally there is a husky, dry, hoarse cough.

TREATMENT.—Give $\frac{1}{4}$ teaspoonful of the following compound powder to each sheep at a dose in feed or as a drench twice a day. Use equal parts by weight of powdered sulphate of iron, ground ginger, gentian and flower sulphur. Burn sulphur and let the sheep inhale the fumes, but be sure to remain in the room in order to see that they are not given too much. This treatment should be given once a week for four weeks and it is a good plan to keep the sick and healthy apart. Feed them plenty of nutritious food. Fairly good results follow giving one-half teaspoonful of turpentine in three tablespoonfuls of raw linseed oil twice a week. This will help them. Or, ask your veterinary surgeon to inject, with a hypodermic syringe, five or six drops of carbolic acid and ten drops of chloroform in a teaspoonful of sweet oil into the windpipe, the one dose only; or, you will find gasoline and sweet oil produces quite good results, one-half teaspoonful of the gasoline in a dessert spoonful of oil. When any mixture of this kind is put into the windpipe, it produces some coughing and the sheep or calf should be kept in fresh air until the dead worms are unloaded.

PEOPLE'S HOME REMEDIES FOR STRONGYLUS FILARIA.—

1. **Turpentine and Linseed Oil.**—Give one dram of turpentine in some linseed oil.

2. **Sulphur.**—Burn some sulphur where the sheep will be compelled to inhale the fumes, taking care not to suffocate them. This treatment should be repeated once a day for three or four days.

PNEUMONIA.—Pneumonia is an inflammation of the lung substance.

CAUSES.—An inflammation of the lungs very often follows congestion of the lungs. It is the result of exposure to cold storms and is very often associated with other diseases such as pleurisy, bronchitis and catarrhal affections of the air passages.

SYMPTOMS.—There is loss of appetite, great thirst, quick breathing, some coughing and a quick pulse which generally grows weaker. By sounding the chest with the ear placed to the side, back of the shoulders, a grating sound will be heard.

TREATMENT.—Place the animal in a clean well-ventilated pen, not in a basement. It should not be forgotten that fresh air and cold water are two of the essentials in treating pneumonia. Also give aconite to reduce the fever, or give saltpeter in the drinking water. Also give tonics or stimulants as the case seems to demand. Good nursing and plenty of fresh air are two important things to look after. Also give tonics and stimulants in the later period of their sickness.

PEOPLE'S HOME REMEDIES FOR PNEUMONIA.—

1. **Quinine, Whiskey, Saltpeter and Aconite.**—Every six hours give 3 grains of quinine in half an ounce of whiskey and every four hours give 2 grains of saltpeter and 2 drops of aconite. Begin giving the first mixture and wait one hour before beginning with the second remedy.

DISEASES OF THE GENERATIVE ORGANS.

(Including Lambing and Attending Difficulties, Garget, Cleaning, Castration, Etc.)

LAMBING.—The usual period of gestation in ewes is from 145 to 165 days but most ewes lamb in about 155 days. In order to tell when ewes have been mated the ram is generally painted on his breast and brisket; some of this paint is left on the ewe when served; so, if close watch is kept, you can tell pretty nearly when the ewe will lamb. After the ewe has been pregnant three months the udder usually commences to fill, especially if she is young, but if old she does not make bag so early. When ewes are making preparations to lamb they generally leave the rest of the flock and appear uneasy, pawing the ground, lying down and getting up and bleating as if looking for their lamb. Very soon the water bag breaks which is followed by labor pains and the expulsion of the lamb.

DIFFICULT LAMBING.—It is seldom necessary to help a ewe to lamb and she should never be assisted unless you believe it is necessary for when she is taken hold of and frightened it sometimes causes her to cease having labor pains and greatly delays matters, then the operator fails to get the necessary assistance from her he otherwise would have had if her pain had kept up. The forelegs should come first with the nose between and when a lamb comes this way the ewe seldom has any trouble, but the forelegs may come with the head turned back, or one leg and head, or one foreleg and a hind one may come first. Or, she may have twins and a leg of each comes at the same time. Therefore, whoever assists her should study the situation and take steps to put the lamb in a normal position, then she can soon be relieved. It is always good practice to use some disinfectant or carbolized lard or oil and warm water; besides, the hand should be clean and the nails cut short. Push the lamb back into the uterus with either a crutch or the hand and put it into a normal position; never use too much force for fear of injuring the ewe. Every sheep breeder should have some handy instruments for use in such cases. A great many lambs die from getting chilled when they are born. Their lives could have been saved by keeping the ewes in a warm place. If you find a lamb a few hours old that is chilled, dip it in warm water, a little warmer than body heat, then wrap it in a woolen cloth until it dries and keep it in a heated room for a few days.

GARGET—MAMMITIS—INFLAMMATION OF UDDER.—

CAUSES.—The deep udders of sheep which are easy milkers are most commonly affected with garget and it is generally the result of infection or injury or too much cold air or moisture, producing congestion followed by an inflammation of the bag. When an udder is infected the bacteria generally creep through the teat opening; this is why so many free milkers are diseased. Of course bacteria may reach the udder of many sheep, and no doubt they do, without doing very much harm but in many cases they seem to set up an active inflammation which is not easily subdued. Butting lambs which bruise their mothers' bag and also over-feeding cause the udder to in-

flame. Any severe injury may cause a simple case of garget but the majority of cases show germs or bacteria in the diseased quarter.

SYMPTOMS.—There is a tense, hard bunch in one or more quarters of the udder, increased heat in the bag, some fever, loss of appetite and quick breathing which is the result of pain.

TREATMENT.—Support the udder with a bandage, apply hot fomentations early and often for they give good results, and irrigate the udder with one part bi-chloride of mercury and one thousand parts of clean water once a day. It is also good practice to inflate the blocked quarter with oxygen or sterilized air if nothing else will open it. This may be done by pumping oxygen or air into the udder with a bicycle pump. I have obtained good results from applications of hot raw linseed oil or camphorated oil. Gentle hand-rubbing will always help a caked bag and giving small doses of iodide of potassium will help to clear it. Grain should not be fed to sheep while their udders are much inflamed and it is important to keep the bowels open and active.

CLEANING—THE PLACENTA NOT COMING AWAY.—The placenta, or cleaning, should come away very soon after lambing but if it does not, it should be pulled away gently. However, I like to wait five or ten hours before taking it away. If you give any medicine it should be a laxative of either epsom salts, sweet oil or raw linseed oil; salts is the best. If the bowels are open and active it is not good practice to give a cathartic. I have obtained good results by giving one-dram doses of tincture of ergot but it is seldom necessary.

EVERSION OF THE WOMB.—Eversion of the womb is usually the result of violent straining when lambing or soon after, or it may be the result of weakness. Whenever it occurs the parts should be kept very clean. This is best done by placing a towel under the uterus and washing the womb with one part carbolic acid and one hundred parts tepid water. After you have cleaned the uterus, elevate her hind parts and gently return the uterus. The hind parts should be elevated three or four inches higher than the fore parts. Two or three stitches should be taken in the upper part of the vulva and left in for a week. A surcingle placed around her waist will prevent her displacing the parts and if she is in any pain give one dram of laudanum every hour or two until pain ceases.

INFLAMMATION OF THE TESTICLES.—Inflammation of the testicles is generally the result of an injury.

SYMPTOMS.—On account of the pain the ram usually stands. The scrotum is swollen and tender and his appetite is poor.

TREATMENT.—Suspend his testicles in a bandage or net. Foment with hot water and apply equal parts of extract of witch hazel, alcohol and hot water; or, dissolve one ounce of sugar of lead in a quart of water and apply several times a day. Give epsom salts to open the bowels and feed cooling, laxative food. In some cases pus forms and when it does it should be allowed to escape and the scrotum should be washed out with peroxide of hydrogen and later with carbolic acid and water, one part acid and fifty of water.

CASTRATING LAMBS.—Lambs should be castrated when they are five or six days old. The operation is exceedingly simple and it is best done by having an assistant hold the lamb. Cut off quite a portion of the pouch. This is easily done with either a sharp knife or scissors. Then pull out the

testicle, either altogether or well out, and cut off the cord. Then apply one part carbolic acid and fifty parts water or blow on equal parts of iodoform and boric acid. When operating always clean your knife or scissors and dip them into carbolic acid one part and water fifty parts. Be sure to clean your tools after each operation for fear of one sheep poisoning another.

CASTRATING RAMS.—When castrating an old ram it is well to keep in mind that there is danger of his bleeding to death if the operation is not performed properly. Throw the animal down and roll him on his back and then tie his legs or have him held. Either cut off the end of the sack or make a bold incision into the scrotum to allow the testicle to escape; then cut the attachment with a knife, pull out the cord and cut it off with either an emasculator or ecraseur, or it will perhaps be more convenient to tie a silk or linen string around the cord, leaving the ends long and hanging out of the body so that the string will fall out of the body when the end of the cord sloughs off. Wash the wound with carbolic acid, one part, and water, fifty parts; or, dust in iodoform and boric acid twice a day. The knife and hands of the operator should be kept clean and the knife should be put into carbolic acid and water before it is used. Always wash the knife before it is used on a second sheep for fear of infection. The wound should be dressed once or twice a day.

VARIOUS DISEASES.

(Including Foot-Rot, Grubs in the Head, Ticks, Scab, Sore Eyes, Swollen Feet, Docking, Maggots, Wool-Shedding, Hydrophobia, Lockjaw, Etc.)

FOOT-ROT.—Foot-rot is a contagious disease caused by a micro-organism and is always made worse by standing in manure or filth or from wearing the hoofs too close or from running on soft boggy pastures and there are many other causes which may bring on simple foot-rot that may not be the contagious kind.

SYMPTOMS.—In nearly all cases there is some lameness and in many cases severe lameness. The heat of the foot will tell you which is the sore one. It may be the result of injury and only foul in the foot, or it may be non-contagious.

TREATMENT.—In case there is only superficial rawness either between the claws or on the back part of the heel, touch the sore with one part of sulphuric acid and four parts of water, then smear the sore with pinetar, cover with oakum, and bandage. I have found sugar of lead and water very good. Use an ounce of sugar of lead to a quart of water and it should be applied daily. It is often necessary to trim off some of the horn to get at the sore parts. When you are sure the case is one of contagious foot-rot stand the sheep in a saturated solution of bluestone (sulphate of copper) for ten or twelve minutes and this mixture should be at blood heat. If there are any very raw sores touch them with crude carbolic acid, muriatic acid or nitrate of silver or with a red hot iron. The feet should be kept clean and the diseased sheep kept away from the well ones and well fed. If they do not eat well give vegetable tonics.

PEOPLE'S HOME REMEDIES FOR FOOT-ROT.—

1. **Blue Vitriol.**—Put four inches of water into a tank and add all the blue vitriol it will dissolve. Cut away all diseased parts of the foot and let each sheep stand in this solution for ten or fifteen minutes and then apply chloride of lime and fill the cleft with a piece of tow long enough to tie to the foot. The lime should be renewed daily until a cure is effected. The farmer sending this recipe lives at Windham, Ohio. He says: "Using this recipe once was worth over one hundred dollars to me. At an auction I bought a flock of over fifty sheep for one dollar per head as they were so badly diseased with foot-rot that no one else would buy them. I took them home, used this treatment thoroughly and finally cured them and sold them for three dollars per head, which made me a profit of two dollars per head on over fifty sheep."

It is only necessary to add that it is the farmer who knows the most about stock, their diseases and how to cure them that makes the most money. Nowadays the farmer should be as wide awake and up-to-date as the business man if he expects to make the greatest success.

2. **Turpentine.**—Clean the foot carefully and pour turpentine freely upon the affected parts.

3. **Arsenic.**—Drive the sheep through a long trough containing one-half pound of arsenic to five gallons of water.

4. **Carbolic Acid and Corrosive Sublimate.**—Construct a long trough and fill to the depth of three or four inches with water to which has been added an ounce of carbolic acid and two drams of corrosive sublimate to each quart of water. Drive the sheep through this trough once a week until cured.

GRUBS IN THE HEAD.—The grub in the head of sheep is the larva of a small gadfly (*Æstrus Ovis*) which deposits its live embryo on the margin of the nostrils. It passes up the nasal cavities into the sinuses and nests just below the eyes. It is during the hot months of July, August and September that these gadflies bother sheep most. These larvæ remain in the sinuses all winter and come out in the spring and in three or four weeks turn into gadflies. During the summer when these flies are bothering sheep it is a good plan to allow the sheep to run on a plowed field in order that they can push their noses into the earth and prevent being infested.

SYMPTOMS.—There is generally more or less irritation of the nose with some discharge and when there are many of the larvæ they produce dizziness.

TREATMENT.—Place your sheep in a warm building and this will induce the grubs to come out; or, blow some Scotch snuff into the nose twice a day; or, burning some red pepper will cause sneezing and dislodge some of them. By far the better treatment is a preventive one. During the gadfly season keep the sheep in a dark shaded stable in the daytime. Plow a few furrows to give the sheep loose earth to rub the nose in. Put tar on the nose and it is better to add some fish oil to it. It is well to keep in mind that grubs usually come out of the sinuses in the spring but if they do not the only successful treatment is to cut (trephine) through the bones of the face between the eye and the median line of the face or just in front of the horn if the animal has horns. The sinuses should then be washed out with weak salt water at about the temperature of the body and kept up until the grubs are dislodged. Sheep that have grubs in the head should be well fed and should be treated in due time.

PEOPLE'S HOME REMEDIES FOR GRUBS IN THE HEAD.—

1. **Sulphur.**—Burn sulphur near the sheep so that they will inhale the fumes. They should inhale enough to cause coughing but not enough to suffocate them.

2. **Kerosene.**—Pour half a teaspoonful of kerosene oil into each nostril if the sheep are suffering with grubs in the head.

3. **Preventive.**—To keep the gadfly away from the sheep put some pine-tar on their noses during the fly season.

TICKS.—The sheep tick is an insect with which every farmer is familiar. The female drops one egg at a time, therefore ticks do not multiply very rapidly. When sheep are shorn, kill the ticks or they will get upon the lambs for protection and bother the flock for a whole year.

TREATMENT.—The same remedies recommended for scab will kill ticks. One dipping is generally all that is required to kill them.

PEOPLE'S HOME REMEDIES FOR TICKS.—

1. **Sulphur, Salt and Saltpeter.**—With 5 pounds of salt mix 1 pound of sulphur and $\frac{1}{4}$ pound of saltpeter. Keep this where the sheep can get it at all times and they will not be troubled with ticks or skin diseases.

2. **Sulphur, Salt and Wood Ashes.**—Mix equal parts of sulphur, salt and wood ashes. Keep this mixture before the sheep all the time and it will keep them in good condition and prevent both ticks and fluke worms.

PEOPLE'S HOME REMEDIES FOR LOUPING ILL.—

1. **Tobacco and Salt.**—The louping ill is caused by ticks which may be removed by washing the sheep with a strong tea made from tobacco. Add some salt to this tobacco tea and it will be all the more effective.

2. **Turpentine.**—Turpentine will destroy the ticks that cause this trouble.

3. **Creosote and Linseed Oil.**—Wash the sheep with a solution of one part creosote to four parts linseed oil.

INFLAMED EYES—OPHTHALMIA.—Sheep are very often troubled with sore eyes. Bathe the eyes with hot or cold water three times a day for thirty minutes at a time and apply a saturated solution of boric acid. This is prepared by dissolving all the boric acid the water will take up and this should be applied after using the water. Another very good eye wash is made by dissolving 4 grains of nitrate of silver and one grain of atropia in one ounce of rain water. I have also obtained good results by blowing some calomel into the eyes occasionally, when milder remedies had failed.

SCAB.—Scab is a skin disease very similar to mange in horses and itch in man.

CAUSES.—It is produced by a very small insect which irritates the skin and soon burrows beneath the cuticle, producing some discharge that dries and forms a sort of crust to protect these parasites and this causes the wool to slough off. These scab germs multiply quite rapidly, producing great irritation and emaciation and frequently death.

SYMPTOMS.—The symptoms are uneasiness and trying to bite or rub the shoulder or parts most affected, showing that there must be intense itching. If you will examine the skin you will see that there is a watery exudation but you will fail to see the scab insects unless you use a microscope or powerful magnifying glass. You will soon notice several of your sheep scratching, for scab is highly infectious and soon goes through a flock. The wool usually drops off in bunches leaving a bare patch.

TREATMENT.—In order to cure scab you must dip the sheep and it should be done thoroughly. Nearly all the coal-tar disinfectants on the market will cure scab, but I believe they should not be diluted as much as their directions state. In most cases make the solution one-third to one-half stronger than prescribed and you will lessen your work and cure the scab more quickly. A very effectual dip is prepared by making a decoction of tobacco, twelve pounds leaf tobacco and eight pounds sulphur in fifty or sixty gallons of hot water. Dip the sheep in this when it is a little warmer than body heat, leaving the sheep in the dip not less than four or five minutes. The United States Government issued a bulletin telling how to make the lime and sulphur dip for scab in sheep and you would make no mistake in sending for this bulletin. If you use the lime and sulphur dip, do not leave the sheep in the dip more than two minutes at a time. It is a good plan to dip your sheep every ten days or two weeks for four or five weeks. When sheep are dipped for scab the ticks are killed. Galvanized iron or concrete dipping vats are the best.

PEOPLE'S HOME REMEDIES FOR SCAB.—

1. **Lard, Oil of Tar and Sulphur.**—Gradually mix $\frac{1}{2}$ pound of oil of tar with 1 pound of sulphur and then add 2 pounds of lard and rub together to form an ointment. This ointment is an effective remedy for scab in sheep.

2. **Tobacco.**—Wash the sheep thoroughly with strong tobacco tea.

3. **Wood Soot and Turpentine.**—Mix a little turpentine and wood soot and add to their grain when feeding if the sheep have the scab.
SWOLLEN FEET.—

CAUSES.—When a sheep has a swollen foot it is generally the result of an injury of some kind, and by close inspection you can tell what is wrong. Very often the biplex canal in the front and upper part of the foot becomes inflamed and red, causing the coronet and pastern to swell. When this occurs the toes are usually apart and the foot is quite tender. Examine the foot for foreign bodies and treat as if it were a case of simple foul. Sometimes a few applications of tincture of iodine will effect a cure. The coal-tar disinfectants, when applied full strength, act very well.

PEOPLE'S HOME REMEDIES FOR FOUNDER.—

1. **Castor Oil and Soapsuds.**—Give the sheep two tablespoonfuls of warm castor oil and inject the bowels with warm soapsuds. This treatment may be repeated in two hours if necessary.

2. **Raw Linseed Oil and Soapsuds.**—Inject the bowels with warm soapsuds and give two tablespoonfuls of raw linseed oil. Repeat in an hour and a half or two hours if not relieved.

FRACTURES OR BROKEN BONES.—When sheep fracture the limbs, the bones should be put back into place and a Paris plaster bandage applied and the sheep kept fairly quiet. You can purchase plaster bandages already prepared for use and there is no reason why farmers cannot apply them. Fractures of young sheep heal rapidly and a bony union generally takes place if the bones are held in position. Treat fractures in sheep the same as in other animals.

DOCKING.—Docking in lambs should be done when they are only a few days old unless they are to be marketed before they are three months old. The tail can be cut off easily with one stroke of a knife or with docking pinchers or with a mallet and chisel. In order that the flesh may drop over the end of the tail after it is cut off, draw the skin and flesh well forward towards the body, then cut it off and the flesh will drop over the end of the tail and make a better looking tail; besides, the lamb suffers less when the operation is performed in this way. When the old lambs are docked it is necessary to cord tail them to stop bleeding, leaving the string on for 24 hours. It is also good practice to apply one part coal-tar disinfectant and four parts of vaseline to the end of the tail. When the operation is performed, if the tail bleeds too much burn the end with a red hot iron or apply some of Monsel's solution or apply either hot or cold water.

MAGGOTS IN WOUNDS.—Maggots are very likely to get into wounds in sheep if the sores are neglected and not kept clean and properly treated. Blow-flies are the cause.

TREATMENT.—First of all, clean the wound and apply one part of carbolic acid and thirty parts of water, or apply tincture of myrrh; or, drop four ounces of sugar of lead, three ounces of sulphate of zinc, and two ounces of carbolic acid into three quarts of water and apply twice a day. Another very good plan is to clip off all the wool tags which hold dirt and filth and apply diluted carbolic acid, adding a little turpentine, camphor and asafoetida, or apply diluted kerosene.

WOOL-SHEDDING.—

CAUSES.—Keeping sheep too warm and feeding them too much stimulating food will cause them to shed some wool.

SYMPTOMS.—Whenever the wool commences to drop off there is a reason and generally a good one. Reduce their grain allowance, keep them in a cooler place and salt them well, and the wool will soon stop dropping off. Give five drops of Fowler's solution of arsenic and thirty drops of fluid extract of sarsaparilla at a dose in feed twice a day, or give $\frac{1}{4}$ teaspoonful baking soda at a dose twice a day. It is also a good plan to feed some vegetables and in some cases give fifteen grains of sulphur at a dose in feed twice a day, or give some saltpeter.

HYDROPHOBIA—RABIES.—Hydrophobia, or rabies, is quite common in sheep for if bitten by a mad dog or other rabid animal they seem to be easily infected. As there is no remedy for this ailment all sheep bitten should be destroyed for fear of their doing damage. The preventive is altogether too expensive to apply to sheep but it should be given to man if he has been bitten by any animal that has rabies.

TETANUS—LOCKJAW.—

CAUSES.—It must be understood that tetanus is caused by a germ which makes its way into the circulation or blood of an animal or person. The most common abode for this bacillus is in rich fertile garden soil or filth; therefore, in treating wounds on animals they should be protected so as to make it impossible for these germs to enter the body.

SYMPTOMS.—There is great stiffness, locking of the jaws, hardening of the muscles and quick breathing. The sheep is unable to walk and generally dies in a day or two.

TREATMENT.—The best drugs to give partial relief are belladonna or henbane (*hyoscyamus*) but it is well to keep in mind that we have no certain remedy for tetanus, but we can prevent it by immunizing the animal for a few weeks when he suffers from a wound low down on the body.

HOGS.

DISEASES OF THE DIGESTIVE ORGANS.

(Including Indigestion, Diarrhea, Constipation, Worms, Fits in Pigs, Rupture, Liver Disease, Black Teeth, Hog Cholera, Etc.)

THE STOMACH OF THE PIG.—The stomach of the pig is simple, yet it performs the functions of both carnivorous and ruminating animals. The saliva of the pig is quite active, continuing after it reaches the stomach to assist in digesting starchy food. Therefore, the pig fattens on cereals more rapidly than other animals but it takes him longer to digest meat than it does the carnivora and, as he does not masticate vegetables as well as herbivorous and ruminating animals, he does not extract the same nutriment from them that they do. The intestines of a hog are not nearly so sensitive as those of the horse; therefore, they are less likely to become diseased. The stomach of the hog possesses wonderful digestive powers.

INFLAMMATION OF THE STOMACH—GASTRITIS.—In all mild cases the mucous membrane of the stomach is inflamed but in severe cases the muscular parts are involved. This is not a very common ailment in hogs on account of their stomachs not being easily inflamed.

CAUSES.—Gastritis is generally the result of giving caustic or irritating drugs and is often associated with other ailments.

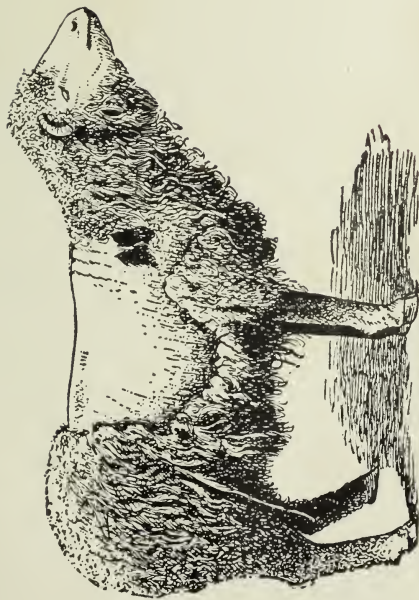
SYMPTOMS.—There is generally some vomiting, more or less pain and uneasiness, and some thirst. The end of the nose is dry, as is also the skin; the urine is of a brown color; the tongue is covered with a fur and the pig sometimes coughs. In some cases of gastritis the hog lives only a few hours, that is, if he has been poisoned with drugs.

TREATMENT.—Give carbonate of soda if he has been given acid and give vinegar to counteract the effect of an alkali; or, give milk if you have nothing else, adding 25 or 30 drops of tincture of opium. Let him have plenty of cold water and if he is weak give him some black coffee and whiskey. If you believe he is full of indigestible food give two ounces of castor oil to clean him out. If there is very much vomiting, give 20 drops of the medicinal solution of prussic acid, or a few drops of wine of ipecac, or some strong black coffee. After the acute symptoms pass off give plenty of milk and water with some oatmeal added.

INDIGESTION.—

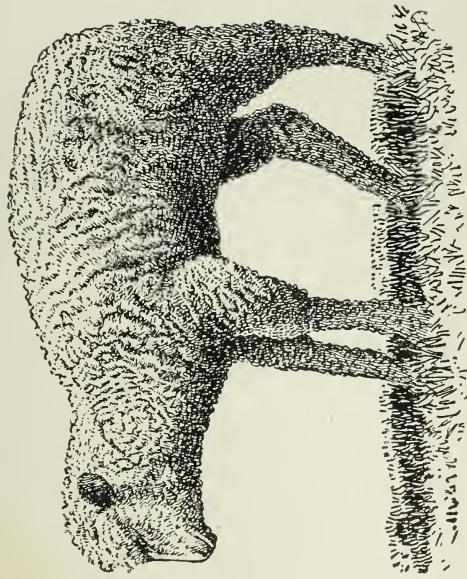
CAUSES.—The pig very often suffers from attacks of indigestion for want of exercise, because of being fed too long on one kind of food or because of eating decomposed meat or food of poor quality.

SYMPTOMS.—There is either partial or complete loss of appetite in most cases; however, I have known them to crave filthy food that they would not care for when well. This shows it to be a sort of acidity of the stomach and the hog was hunting to find a remedy. The bowels are either costive or too loose. In some cases the pig coughs and in young pigs they often have



SHEEP SCAB.

This is an advanced case. It is caused by very small itch mites that live and multiply under the scurf.



LAMB WITH STOMACH WORMS.

This is a common attitude assumed when troubled with stomach worms. The sheep loses flesh and dies unless relieved.



RICKETS IN PIGS.

Caused by lack of mineral matter in the food. The bones are weak and bend or break. Pigs are frequently affected after being weaned. Give plenty of salt, lime, charcoal and wood ashes.



HOG CHOLERA.

This a familiar attitude assumed when suffering with cholera.

fits. In most cases they have some fever and the urine is scanty and of a brown color.

TREATMENT.—In most cases it is good practice to give a cathartic, especially if the hog is constipated. If the bowels are loose, give castor oil or raw linseed oil and if costive, give epsom salts. The dose of salts is from one to two ounces and castor oil is given in the same quantity; however, in all cases you must use your own good judgment as to the dose. Tincture of rhubarb and tincture of opium and ginger act well in cases of too much bowel action. If the pig is troubled with vomiting give him one-half teacupful of strong black coffee, or two or three drops of wine of ipecac, or twelve drops of nitro-muriatic acid in a little water or give five drops of creosote or carbolic acid in cold water. Ginger, peppermint and baking soda are all remedies which assist in correcting stomach disorders. Powdered wood charcoal is another simple home remedy that always helps hogs with indigestion.

ACUTE INDIGESTION.—Acute indigestion follows fast eating of food to which the animal is unaccustomed; eating too much at a time; or from a fermentation of what the animal has eaten, causing bloating and great distress.

TREATMENT.—Give a teaspoonful of hypo-sulphite of soda every hour until the bloat goes down, or give a tablespoonful of aromatic spirits of ammonia every hour. Do not give baking soda for bloat as this is a mistake that is often made by stock raisers. After the acute attack passes off give a tablespoonful of powdered charcoal and a teaspoonful of ginger at a dose in feed two or three times a day.

CHRONIC INDIGESTION—STUNTED.—Changing young pigs from their mothers' milk to grain stunts a great many of them; also, when grain is taken away from pigs and an insufficient quantity of nutritious food is furnished them they may become stunted. It can be safely stated that nearly all pigs are wormy; some of them have far too many worms and when you see a pig eating plenty of rich nourishing food and not growing but seemingly getting thinner you can safely suspect him of having lots of worms.

TREATMENT.—If you believe he is wormy, treat for worms; if he is sick, try to diagnose his ailment and treat for it; however, it is generally well to give him a dose of castor oil and a teaspoonful of the following compound condition powder for hogs. Take equal parts by weight of ground gentian root, ground ginger, baking soda and powdered charcoal, and in some cases add powdered copperas. A dose should be given in feed three times a day, also salt them well. It is needless to speak of the importance of feeding a good quality of food until they commence to grow.

MORBID APPETITE.—Hogs that eat enormous quantities of food or that eat rubbish unfit for any animal to eat are in an abnormal condition and seldom lay on flesh. In many cases it is due to acidity of the stomach.

TREATMENT.—In all such cases the stomach should be rested and the hog put on an easily digested diet. Mix equal parts by weight of powdered sulphate of iron, ground gentian, ginger, baking soda and charcoal, and give the hog a teaspoonful at a dose in feed two or three times a day. In many cases it is good practice to give a cathartic of either epsom salts or castor oil to open the bowels.

ENTERITIS—INFLAMMATION OF THE BOWELS.—Enteritis is an inflammation of the bowels; however, in most cases only a portion of the bowels are inflamed. This is quite a fatal ailment in pigs.

CAUSES.—It is often the result of constipation, colds, injuries, eating

irritating substances and drinking impure water and it may result from other diseases.

SYMPTOMS.—There is loss of appetite, thirst, fever, pain, dryness of the mouth, looseness of the bowels with some blood, sometimes vomiting, and always some weakness.

TREATMENT.—When the bowels are too loose give twenty or thirty drops of tincture of opium and when they are costive give epsom salts. Very often it helps to give four tablespoonfuls of castor oil to clear out the stomach and bowels. In some cases small doses of calomel help to effect a cure. Apply mustard and water to the abdomen every day and, if it is possible, keep the hog or pig on liquid food for a few days.

COLIC.—Colic in hogs is not a very common ailment and when it does occur it is generally the result of changing from a digestible diet to one that is less so, thereby causing fermentation, and it also follows exposure.

SYMPTOMS.—Sitting on haunches, shifting position, moving head from side to side, sometimes bloating, grunting, and squealing are symptoms.

TREATMENT.—Any home colic remedy acts well on the hog. Give laudanum in twenty-drop doses. Essence of peppermint, ginger, whiskey, aromatic spirits of ammonia or some camphorated tincture of opium will help to give relief.

VOMITING.—Vomiting is the act of ejecting food or material from the stomach, accomplished by contraction of the stomach with perhaps some contraction of the diaphragm and abdominal muscles.

CAUSES.—It is generally the result of an irritation or inflammation of the stomach; however, it may also be the result of some nervous disorder.

TREATMENT.—Without knowing the cause it is not an easy matter to tell what to give; however, try coffee, aromatic spirits of ammonia, peppermint, laudanum, ginger, wine of ipecac, a few drops of creosote or carbollic acid in water, or soda or a few drops of chloroform.

BLEEDING FROM THE STOMACH.—Bleeding from the stomach is generally attended with vomiting of blood but is not very common in the pig.

CAUSES.—It is most likely the result of injuries. It may be caused by swallowing a bone with a sharp end and thus wounding the stomach.

SYMPTOMS.—There is loss of appetite and vomiting or passing of blood. Examine the blood and if dark colored and mixed with some food it comes from the stomach, while if it is from the lungs it will be of a brighter red color.

TREATMENT.—Drop a grain or two of sugar of lead and ten drops of laudanum into a teaspoonful of cold water and give this quantity at a dose every two or three hours; or give a teaspoonful of fluid extract of ergot; or give ten or fifteen drops of Monsell's solution in water every two or three hours.

DIARRHEA.—

CAUSES.—Diarrhea is caused by eating food that ferments, eating irritating things, too much action of the liver, effete material in the blood, or too much exercise on a hot day. In fact, when the stomach is full, any cause which will produce excessive bowel action may cause diarrhea. Weakness of the bowels may be the cause and young pigs very often scour on account of their mothers eating certain kinds of food. Diarrhea is not really a disease but a result of other ailments.

SYMPTOMS.—In simple cases the bowels act too freely and the excrement is liquid but there is no disease. When there is much pain or loss of

appetite or when the liver is much affected the passages will be of a yellow color and when there is vomiting and straining it is very often due to too much acid.

TREATMENT.—If you can tell what caused this bowel trouble and remove it they soon get well. Give a small dose of castor oil or sweet oil to clean out the stomach and bowels and follow this with fifteen or twenty drops of spirits of camphor and twenty or twenty-five drops of laudanum and repeat these doses every two or three hours until the excessive bowel movements are checked. When the purging has been going on for some time it is not necessary to give oil. I have given a grain of powdered opium and four grains of sugar of lead every three hours and found that it acted well. All home remedies that are given in human practice for diarrhea can be given to hogs with equally good results.

PEOPLE'S HOME REMEDIES FOR SCOURS IN PIGS.—

1. **Copperas.**—Give the sow $\frac{1}{2}$ teaspoonful of copperas in a little swill. Do not feed her much slop until after the pigs are weaned.

2. **Air-Slaked Lime.**—Give the pig a tablespoonful of air-slaked lime two or three times a week in the slop.

DYSENTERY.—Dysentery is an inflammation of the mucous membrane of the bowels with frequent bowel movements and with some blood in the excrement and some scales of mucus. There is also some bowel pain.

CAUSES.—It often follows eating putrid, rotten meat or decayed vegetables and lying in cold damp places. Worms, a torpid liver, and constipation also cause it.

SYMPTOMS.—There is some uneasiness, dullness, loss of appetite, and some pain, and there are passages of dry excrement at first, then the movements are thin and tinged with either mucus or blood. There is always some fever and some bloating and the longer the disease lasts the stronger will be the smell of the excrement.

TREATMENT.—Give a good large dose of castor oil to clean out the stomach and bowels; also give calomel and a few grains of powdered opium, or 25 drops of laudanum. A teaspoonful of ginger, three grains of quinine, or one ounce of whiskey in the last part of their sickness does them good. Give three times a day.

CONSTIPATION.—The bowels of hogs should move about so often and if they do not we say they are constipated. Constipation soon causes the bowels to become somewhat impaired and unfit to perform their normal work.

CAUSES.—An accumulation of hard excrement or other substance in the bowels is often brought on by over-feeding and under exercising of hogs and if not relieved produces irritation and inflammation.

TREATMENT.—Give castor oil in two-ounce doses every twelve hours until relief is obtained; or give epsom salts with some senna added; or give any of the reliable compound cathartic pills which are used by man and they will give good results. If the pig is weak give tonics and stimulants. Give food of a laxative nature for a few days after an attack of constipation and be sure to exercise the hog.

PEOPLE'S HOME REMEDIES FOR CONSTIPATION.—

1. **Salt and Wood-Ashes.**—Feed plenty of salt and wood ashes and the hogs will not be troubled with constipation.

2. **Epsom Salts.**—Give four ounces of epsom salts if the hogs are constipated. Also give an injection.

PEOPLE'S HOME REMEDIES FOR LAMENESS.—

1. **Sulphur and Epsom Salts.**—To a very large hog give two teaspoonfuls each of sulphur and epsom salts in the feed three times a day until the bowels are thoroughly opened.

2. **Salt and Ashes.**—Keep salt and wood ashes before the hogs all the time and they will be troubled with neither lameness nor constipation.

OBSTRUCTION OF THE BOWELS.—By obstruction of the bowels is meant their blocking with some impediment, preventing the free passage of feces.

CAUSES.—The hog very often eats food of an indigestible nature and frequently picks up coal and cinders. Besides, concretions seem to form in the bowels and tumors grow and obstruct the passage of excrement.

SYMPTOMS.—The attack may come on suddenly, creating severe pain and uneasiness. There is some vomiting and bloating, followed by inflammation of the bowels and death.

TREATMENT.—Give two ounces of castor oil or three ounces of raw linseed oil or epsom salts and some senna. If the oil fails to act add three drops of croton oil; however, it should be remembered that croton oil is a drug that will kill if too much is given. Give injections of soap and warm water with some sweet oil added. If vomiting is severe give black coffee or two or three drops of wine of ipecac or any simple home remedy that will warm up the stomach. The custom of feeding coal and coal cinders to hogs is altogether too common.

INTERNAL PARASITES—WORMS.—Nearly all young pigs have a few worms and I might safely say the same regarding old hogs. This is the result of our methods of feeding pigs. Much of the food is fed without being cooked and the meat which they very often eat is full of ova which soon grow and develop into worms after the hog has eaten them.

CAUSES.—The habits of hogs render them more liable to worms than are many other animals. The ova when taken into the stomach and bowels, meeting moisture and heat, seem to grow and as the hog eats all kinds of raw vegetables and meat it is no wonder he is wormy; besides, he sometimes has indigestion and this favors their growth.

SYMPTOMS.—On account of the worms' movements in the stomach and bowels they seem to produce some irritation, bringing on a certain amount of pain and uneasiness. There is itching of the anus and nose, also rubbing of the tail and rooting with the nose. The bowels are either costive or too loose and sometimes a little blood can be seen in the excrement and sometimes shreds of mucus may be seen and if the microscope is used you will see the small worms or their eggs. Worms derange the nervous system, causing vertigo, chorea, coughing, fits, fever, loss of flesh and skin diseases.

TREATMENT.—When treating pigs for worms the stomach and bowels should not be too full. Fairly good results follow giving some charcoal and hard wood ashes or sulphate of iron in the feed. Others give one-half teaspoonful of turpentine in three or four tablespoonfuls of raw linseed oil and still others give fluid extract of spigelia and senna in tablespoonful doses every four or five hours until the pig purges, then discontinue its use. Some give twenty grains of powdered cedar apple. Areca nut is sometimes given;

also powdered kamala and pumpkin seeds are beneficial. I am told that hogs which eat pumpkins and carrots are seldom bothered with worms.

PEOPLE'S HOME REMEDIES FOR WORMS.—

1. **Turpentine.**—Every third day, until four doses have been taken, give a teaspoonful of turpentine in milk in the morning before feeding.

2. **Gentian and Iron.**—Give a dram each of ground gentian and sulphate of iron in the feed once a day.

3. **Santonine.**—Give five or ten-grain doses of santonine.

FITS IN YOUNG PIGS.—

CAUSES.—It is safe to say that fits in young pigs are often the result of worms, or of over-feeding and want of exercise.

SYMPTOMS.—The first symptom is an unthrifty condition. The legs tremble and shake and the head and neck bend. The pig soon becomes rigid and falls over and struggles some, then remains quiet for a few moments and then gets up and acts as though perfectly well, only to have another sick spell sometime later. Pigs two or three months old should be given twenty grains of powdered kamala and a dessert spoonful of castor oil. Or, give twenty drops of turpentine in two ounces of raw linseed oil and it may be necessary to give more than one dose but not sooner than 24 hours. Young pigs should be given some gentian, ginger and copperas in their feed twice a day.

PEOPLE'S HOME REMEDIES FOR KIDNEY-WORMS IN HOGS.—

1. **Lye and Turpentine.**—Rub the back with turpentine and two or three times a day give in slop one or two tablespoonfuls of weak lye made from wood ashes.

PEOPLE'S HOME REMEDIES FOR WEAK BACK.—

1. **Turpentine.**—Rub turpentine on the back. One application is usually sufficient.

PERITONITIS (INFLAMMATION OF THE PERITONEUM).—

Peritonitis is an inflammation of the membrane that lines the abdominal cavity and which is reflected over the intestines.

CAUSES.—It sometimes follows castration, chills, kicks from horses, hooks from cattle, bunts from rams and punctures through the abdomen. Sometimes it follows farrowing and the penetration of foreign bodies into the bowels. It may result from other diseases such as swine plague and cholera.

SYMPTOMS.—The hog has chills, pain, tender abdomen, bloating, vomiting, quick pulse, fever and short breathing and if the pain increases death usually follows but if the pain subsides it is a favorable indication of recovery.

TREATMENT.—Give either castor oil or sulphate of magnesia but never give aloes. A dose or two of calomel will do good. Give opium to allay the pain; also give eggs and milk to support their strength. When there is much weakness give aromatic spirits of ammonia and whiskey.

UMBILICAL HERNIA.—What is usually understood by hernia is a projection of the bowels through an opening, either natural or artificial, or a rupture of the walls of any organ. Hernia is classified according to its position, but the kind most common to the pig is either umbilical (navel) or scrotal. It is very common to find the omentum or intestine protruding through the umbilicus, caused by a failure of the navel to close early.

SYMPTOMS.—There is a soft puffy bunch at the navel, which, if pressed, will return through the opening and pass back into the body. This rupture, if small, seldom causes the pig any trouble unless it becomes strangulated and if it does not it is seldom necessary to do anything for it.

TREATMENT.—A simple and quite successful way to operate is to roll the pig on his back, press the omentum and bowel back into place, pick up the loose skin, put a skewer through the sack or pouch of hide close to the abdomen and then another one at right angles; then tie a string close to the body back of these pins. This chokes the circulation, the opening in the abdomen fills with serum and the parts swell and close and soon unite. In a week or ten days the pouch of skin sloughs off and your pig is well. I have operated on hundreds and seldom had a failure unless the bunch was very large. Be sure to dip the pins into carbolic acid and water and do not tie the cord too tight.

SCROTAL HERNIA.—Scrotal hernia is where the bowel has passed through the canal into the scrotum, or pouch.

SYMPTOMS.—The scrotum is too large and when pressed feels soft and dough-like.

TREATMENT.—Roll the pig on his back; return the intestine; pull up the scrotum and testicles as far as you can; then apply a wooden clamp (without caustic). Let it remain on until the parts slough off, then apply equal parts of iodoform and boric acid or one part of carbolic acid and thirty parts of water twice daily.

STRICTURE OF THE RECTUM.—Stricture of the rectum should be suspected whenever a pig is found straining and is unable to empty the bowel and if an examination is made the cause will generally be found. The bowel wall may be thickened or falling of the bowel may have taken place or there may be a tumor or stricture.

TREATMENT.—The first step should be to wash out the bowel with soap and warm water and then apply one part of solid extract of belladonna and six parts of vaseline, or one part of fluid extract of belladonna and twenty parts of water, and inject two ounces into the bowel daily. Plenty of vaseline or fresh lard applied to the inside of the bowel gives good results.

HEMORRHOIDS OR PILES.—Hemorrhoids are soft tumors that bleed easily and are found in or near the anus. When they do not bleed they are called blind piles and of course are either visible or invisible. The soft bunches are often varicose veins forming a sort of tumor; the others contain coagulated blood and in either case they annoy the animal.

TREATMENT.—Always give the pig a cathartic of aloes, calomel and ginger or give castor oil, or epsom salts and senna. Fill the rectum full of cold water, adding a little tannic acid to the water. It is sometimes necessary to open these tumors and squeeze out the blood. When this is done open with a narrow knife in several places and apply sugar of lead and water several times a day. Sometimes hot applications act well.

PROLAPSUS ANI—FALLING OF THE BOWEL.—

CAUSES.—Prolapsus ani is generally the result of a weakness of the muscles of the bowels but is sometimes the result of constipation and straining. It also follows excessive bowel action such as people have in diarrhea and dysentery when there is a smarting of the bowels every time they move. The longer the bowel protrudes the more difficult it is to effect a cure.

TREATMENT.—Give twenty drops of laudanum every few hours to stop the straining. Foment the swelling with hot water an hour at a time; or put one dram of sulphate of zinc, two drams of acetate of lead and two ounces of tincture of opium into twenty ounces of cold water and apply to the swelling every hour until the swelling reduces; then return the bowel to its place

and put the hog in a narrow stall with the head three or four inches lower than the hind quarters for a day or two. By keeping him in this position the bowel will not need stitching but will fall back into its normal position. Injections of soap and warm water should be given and the bowels kept open. If you fail to return the bowel have it cut off and sewed to the margin of the anus and if done properly it will unite.

LIVER DISEASE.—The casual observer is seldom capable of diagnosing correctly a case of liver disease. Inflammation of the liver is brought on by feeding too much rich, nutritious food and allowing the animal to have no exercise. It is most common in hot weather.

SYMPTOMS.—There is dullness, constipation, some cough and yellow mucous membranes.

TREATMENT.—This ailment should have prompt, energetic treatment for if not it may bring on other ailments. Purge the pig with epsom salts and give small doses of calomel to act on the liver and bowels. Sometimes castor oil acts well and if the pig is in much pain give calomel and opium several times daily.

JAUNDICE—YELLOW.—Jaundice is not a common disease of the pig. It is known by the yellow appearance of the pig which is the result of absorption of bile.

SYMPTOMS.—There is loss of appetite, dullness, vomiting and deranged digestion. The excrement is of a clay color and the bowels are costive.

TREATMENT.—Give either castor oil or sulphate of magnesia; also give small doses of calomel, podophyllin, phosphate of soda and hot water; or give twelve drops of nitro-muriatic acid two or three times a day.

SPORADIC APHTHA—GLOSS ANTHRAX—GUM MOUTH.—Sporadic Aphtha is a vesicular eruption of the tongue, cheeks and lips. It is very often called gloss anthrax or gum mouth.

SYMPTOMS.—There is loss of appetite and some fever and there are pustules on the tongue and lips.

TREATMENT.—Give three grains of quinine, forty drops of gentian and one-half ounce of whiskey at a dose five times a day. Use alum and water, one ounce of alum to one quart of water, and apply to the mouth three times a day. When the mouth is only slightly inflamed apply borax and water, an ounce of borax to a quart of water. Wash the mouth with this three times a day. Feed gruel made of meal and milk or give eggs, milk and whiskey if the pig is weak. Also be sure to keep the hog in a clean dry place.

BLACK TEETH.—Black teeth is supposed by many hog raisers to be a disease; however, the veterinary profession is pretty thoroughly agreed that they are mistaken and the author shares this same belief, for he has not yet been able to connect it with any sickness. It seems to be natural for some pigs to have black teeth and many of them never have a sick day; besides, at our large slaughter houses many of the finest hogs killed have black teeth and they never harmed the hog. My advise to swine breeders is to leave them alone unless they are decayed and if so, pull them out with a pair of forceps or nippers.

CHOKING.—Sometimes hogs choke when attempting to swallow too large a piece of vegetable or other hard substance.

TREATMENT.—When called upon to relieve choke in hogs give some raw linseed oil, melted lard or glycerine with ten or fifteen drops of fluid extract of belladonna added. If the obstruction does not go down, open the mouth with a gag and remove the obstruction with splint forceps or tongs made of wood or try to work the obstruction down. It may be necessary to use a probang.

HOG CHOLERA AND SWINE PLAGUE.—The terms "hog cholera" and "swine plague" have come into general use among breeders and raisers of hogs and the supposition that these two diseases are entirely different is wrong for they are very similar both in cause and symptoms. Until recently we were led to suppose them to be two separate infectious diseases but to save time and confusion let us consider them as one disease for to distinguish the difference requires the services of an expert to examine the body after death.

CAUSES.—Hog cholera and swine plague are no doubt caused by a germ so small as not to be visible with the microscope and these germs pass readily through filters. Our old theories have been very much changed by the excellent work done in recent years by the government and different state experiment stations. It is well to know that infection is absolutely necessary to produce the disease and without it there can be no hog cholera or swine plague. Certain hogs may resist this infection better than others; however, it makes no difference how susceptible they may be they never take hog cholera without being subjected to this one specific cause. The hogs raised in certain localities under certain conditions seem to possess less power of resistance than others. "Show" hogs that have been pampered and their growth forced and also corn-fed hogs that are kept closely housed in damp, badly ventilated pens appear to be quite liable to cholera infection.

Everyone who raises hogs should bear in mind that the living organisms under favorable conditions multiply rapidly and are carried from place to place in very small particles of filth. It is also well to keep in mind that there are scores of different ways whereby this affection may be carried from place to place. It may be carried by sick hogs, upon the legs and bodies of well ones that have been exposed, carried on wagons, in stock cars, upon the shoes and even clothing of people and it has been known to be carried down streams for miles. It can be safely stated that both the blood and manure of hogs suffering from cholera, and also the dead carcasses are highly infectious to other hogs.

SYMPTOMS.—A single case of hog cholera never presents all the symptoms of the disease for cases vary in virulence and some acute cases run their course rapidly, terminating in death in a day or two while other cases assume a chronic form, the sick hogs living for weeks. A hog infected with cholera becomes dull and dumpish, his hair is rough and the eyes inflamed and soon discharge. There is an effort to cough, the temperature rises to 105 or 106 degrees and the hog hides away in a cool dark place. The appetite is poor and the bowels are either normal or costive at first but soon loosen, the discharges becoming watery and offensive. If the lungs are involved breathing is quickened, becoming more labored and especially in the later stages of their sickness. The skin is generally congested and red on the inside of the legs and along the lower part of the abdomen, the color varying from pink to a sort of red or purple. The eruptions on the skin dry and form scales or scabs of different sizes. The hog stands with arched back, refuses to eat, loses flesh

and strength rapidly, walks with a crippled and wabbling gait and gradually fails in strength until he dies. No person can tell for certain before death whether a hog suffers from hog cholera or swine plague but in the latter case the lungs are often more involved than in cholera and consequently the hog breathes with more difficulty.

TREATMENT.—It is safer to say that hog cholera and swine plague can be prevented, rather than to say they can be cured; however, it is encouraging to know that well hogs can be immunized without danger so as to prevent their taking cholera. The credit of this recent discovery should go to the Bureau of Animal Industry, Washington, D. C. and perhaps a share to the different State Experiment Stations of this country. When a case of cholera is discovered every possible effort should be made to destroy the infection and prevent the disease from spreading. One part carbolic acid and twenty parts water is as good as any disinfectant to use in spraying the pens and sprinkling the ground where the hogs have been. Besides, the sick hogs should be kept by themselves and given good care, their pen sprinkled with air-slacked lime, the hogs kept away from mud and ponds and given some of the following tonic in their feed. Take two pounds of salt, two pounds of baking soda, one pound of Glauber's salts, two pounds of hypo-sulphite of soda and one pound of black antimony; mix thoroughly and give each full grown hog a tablespoonful at a dose in feed or as a drench once a day. It is important to give the hogs good care and also plenty of good food; also, keep them in a dry comfortable place and if they are sick during summer, find a shaded place for them.

PREVENTING THE SPREADING OF HOG CHOLERA AND SWINE PLAGUE.—In a locality where hog cholera exists the owner of well hogs should do many things which he need not do if infected herds were not in his neighborhood. The owner of well hogs should keep away from stock yards and from all pens and farms where the disease exists. It is also important to keep your neighbors away from your place if their hogs are diseased. Before allowing any person to come on your premises ask him some questions and you may learn that he has come from a farm where they have cholera and, if such is the case, keep him off your place. One man should have the care of diseased hogs and visitors should be kept from coming near them. Keep all diseased hogs in small fields by themselves. When any new hogs are bought and brought onto your farm, keep them away from your well ones for three or four weeks. It will pay well to disinfect and clean up after new healthy appearing hogs and it must be done thoroughly after sick hogs are gotten rid of. The troughs and floors should be scalded with hot water or steam or they should be wet with one part bichloride of mercury (corrosive sublimate) and one thousand parts water or use one part coal-tar disinfectant and thirty parts water. Brood sows that have had cholera produce pigs which resist the disease better than if the sow never had cholera and are said to live through an attack better.

HOW TO PREVENT CHOLERA AND SWINE PLAGUE BY VACCINATION.—Blood serum taken from the body of an immunized hog and from one sick with cholera and injected into a well hog produces a mild attack of cholera from which most hogs recover and then they resist the infection. The serum from such hogs injected into the bodies of susceptible hogs seems to fortify them against infection for a time but if blood from a

cholera hog is also used with it then it is likely to immunize the hog for life. The serum method should be used in treating hogs whenever there is an outbreak of cholera in the neighborhood and it is well to immunize every hog as quickly as possible. I do not regard the new method of treating cholera by vaccinating to prevent its spread as likely to spread the disease if the work is done as it should be. Furthermore, if good serum is used few hogs will sicken badly from its use; however, too much virulent blood may be injected into a well hog and make him very sick.

DISEASES OF THE RESPIRATORY OR BREATHING ORGANS.

(Including Pneumonia, Congestion of the Lungs, Bronchitis, Pleurisy, Quinsy, Sore Throat, Coughs, Catarrh, Etc.)

PNEUMONIA—INFLAMMATION OF THE LUNGS—LUNG FEVER.—Pneumonia is an inflammation of the lung substance.

CAUSES.—The weather seems to have a great deal to do with animals taking pneumonia for it is much more prevalent during cold, wet, changeable weather than during hot summer weather. It follows other debilitating ailments and especially those of the air passages.

SYMPTOMS.—There is first a chill and then fever, pain, uneasiness, hard breathing, a quick pulse and some coughing. The disease lasts from nine to fourteen days.

TREATMENT.—Give a few drops of laudanum first to prevent vomiting, or you may give coffee for this. Then give aconite to relieve the fever, or you can give veratrum viride. Good care in the line of food, fresh air and tonics seems to help most cases. Be sure the pen is clean and dry.

PEOPLE'S HOME REMEDIES FOR PNEUMONIA.—

1. **Turpentine, Laudanum and Milk.**—To half a cup of milk add a teaspoonful of turpentine and 30 drops of laudanum. This is the dose for a 100-pound hog. In six or seven hours give another dose, but give just half the above quantities.

CONGESTION OF THE LUNGS—APOPLEXY OF LUNGS—PULMONARY APOPLEXY.—Congestion of the lungs is a very common ailment in hogs and is what is generally called apoplexy of the lungs or pulmonary apoplexy.

CAUSES.—There is too much blood stagnation about the lungs. A fat pig has but little breathing space and if exerted too much when in a weak, flabby condition he is likely to take congestion of the lungs. It also follows keeping pigs in badly ventilated and foul pens.

SYMPTOMS.—There is great pain, the head is down, the mouth open, and there is some blood oozing from the nose in some cases. The extremities are cold, the pulse is weak and in fact the pig is unable to stand.

TREATMENT.—If the pig is cold put him in a warm comfortable place and give stimulants such as whiskey, brandy, rum, aromatic spirits of ammonia or sweet spirits of nitre. Cover the body with woolen blankets and rub the legs with one pint of whiskey with a teaspoonful of tincture of capsicum added. In the early stages the ammonia or ether acts best and the alcoholic stimulants are best later on. Energetic treatment very often prevents its terminating in inflammation of the lungs.

BRONCHITIS—INFLAMMATION OF THE BRONCHIAL TUBES.—Bronchitis is not a common disease of the pig and when it does occur it is in pigs a few months old and then they do not always recover.

CAUSES.—Exposure to cold and wet, too much dust or smoke, and certain conditions of the atmosphere seem to cause it to be epidemic.

SYMPTOMS.—A hoarse cough with difficult breathing, poking out the head, a discharge of mucus from the mouth, some fever and considerable weakness are the symptoms.

TREATMENT.—If you notice the pig when first taken sick, give epsom salts, Glauber's salts or castor oil to open the bowels. To quiet the cough give morphine, opium, belladonna, muriate of ammonia or nitrate of potash three times a day. Also apply mustard and water to the breast daily. In the later stages of this disease give syrup of squills, muriate of ammonia and tincture of lobelia. If the pig is weak give eggs, milk and whiskey.

PLEURISY—INFLAMMATION OF THE PLEURA.—Pleurisy is an inflammation of the membrane that lines the chest and covers the lungs. Strange to say, this membrane is frequently inflamed. I believe hogs very often have light attacks of pleurisy and recover without treatment and no one knows they ever had it.

CAUSES.—Forcing pigs to sleep in cold wet beds is perhaps the most common cause. Standing in a draft or cold wind when warm, or an injury such as a kick are other causes.

SYMPTOMS.—It sets in with a chill and pain in the side, some coughing, quick breathing, restlessness, fever, and arched back. When the chest contains fluid, breathing becomes more labored and quick but the pig suffers less pain.

TREATMENT.—If the bowels are costive give one or two ounces of epsom salts in water as a drench; also, give two drops of veratrum viride and ten drops of tincture of opium at a dose every three hours until the pig seems better and coughs less. If the kidneys do not act freely give fifteen grains of powdered saltpeter at a dose in either feed or water three times a day. When all the fever subsides, give as a tonic one teaspoonful of tincture of chloride of iron, the same quantity of fluid extract of gentian and one-half teaspoonful of fluid extract of cinchona at a dose in feed three times a day. Be sure to keep the pig in a dry clean place.

QUINSY—INFLAMMATION OF THE TONSILS.—This is a very common ailment in swine and is frequently of a serious nature, terminating in death.

SYMPTOMS.—There is great difficulty in swallowing and there is swelling and soreness of the throat and the hog hangs the tongue out of the mouth.

TREATMENT.—Apply hot water or hot cloths to the throat constantly for twenty-four hours; also apply equal parts of extract of witch hazel, spirits of camphor and alcohol to the throat twice a day. Dissolve a teaspoonful of chlorate of potash in one-half pint of water, adding one teaspoonful of fluid extract of belladonna, and gargle the throat with two tablespoonfuls three or four times a day.

LARYNGITIS—PHARYNGITIS—SORE THROAT.—This is a very common ailment in hogs, causing a cough, difficulty in eating and swallowing and generally affecting the breathing.

CAUSES.—It is caused by exposure to storms in the cooler months of the year and wallowing in too cold water in hot weather. Also sudden changes in the temperature from hot to cold and keeping hogs in foul and badly ventilated pens will cause it.

SYMPTOMS.—There is difficulty in swallowing dry feed, spasmodic

coughing, a hot and dry skin, fast pulse, and a tendency to filling up of the throat.

TREATMENT.—If the bowels are costive give castor oil; also give twelve grains of chloride of potash, three drops of tincture of belladonna and fifteen drops of tincture of opium at a dose three or four times a day. Or, give thirty drops of syrup of squills and ten drops of laudanum three times a day. I have used borax, alum and water with good results.

CHRONIC LARYNGITIS.—The pig seldom suffers from chronic laryngitis. Although the throat membranes may be somewhat inflamed for a long time they do not change much, but the pig continues to cough.

TREATMENT.—Apply equal parts of turpentine, aqua ammonia and raw linseed oil and give thirty drops of syrup of squills and fifteen drops of laudanum at a dose two or three times a day.

COLDS.—Hogs suffer from colds, brought on by exposure to wet and storms and also from sleeping in damp basement pens.

TREATMENT.—Feed warm slop and easily digested food and keep the hogs warm and dry. Mix equal parts of ginger and powdered licorice in their feed; a tablespoonful is a dose for a full grown hog and this medicine should be given three times a day until the hog recovers.

SNUFFLES.—This is a common ailment in hogs, affecting them much the same as nasal catarrh, and unless they get well it may end in nasal gleet.

TREATMENT.—Apply one part of peroxide of hydrogen and two parts of water to clear out the nose and give fifteen-grain doses of sulphate of iron in feed three times a day, or give three or four drops of Fowler's solution of arsenic at a dose in feed three times a day. In the treatment of snuffles feed as nearly as possible a balanced ration for hogs. If this disease results in nasal gleet (ozena) it will not pay to treat the hog and it is best to destroy him for fear of contagion; besides, if the bony structures of the nose are diseased it is a difficult task to cure such a case.

COUGHS.—Some pigs appear to suffer from a sort of nervous cough, others appear to cough while they are teething and without any inflammation of the mucous membranes; therefore, it must be some interference with the nerves of respiration.

TREATMENT.—By giving the pigs tonics and good care they generally recover. Onions, garlic, or opium are good, and some give five-drop doses of nitro-hydrochloric acid at a dose three times a day.

PEOPLE'S HOME REMEDIES FOR COUGHS.—

1. **Powdered Licorice.**—To a two-hundred pound hog give two teaspoonfuls of powdered licorice in the feed and repeat the dose in twenty-four hours if necessary.

INFLAMMATION OF THE NOSTRILS—NASAL CATARRH.—Inflammation of the nostrils, or nasal catarrh, is a common ailment of hogs.

CAUSES.—The most common cause is exposure to cold and wet. It is also caused by dust blowing up the nostrils and when nearly all the pigs are affected in your locality it is epizootic.

SYMPTOMS.—Dryness of the membrane of the nose, some swelling, sneezing, a discharge from the nose with an increasing inflammation and loss of appetite are the symptoms of nasal catarrh.

TREATMENT.—It is not necessary to medicate all cases but give the pig good care and a few doses of ginger and nitrate of potash followed with a few two-grain doses of quinine two or three times a day.

CHRONIC NASAL CATARRH—NASAL GLEET—OZENA.—When simple catarrh lasts long it is called chronic catarrh, nasal gleet, or ozena and the discharge becomes very thick and sticky, making breathing quite difficult.

TREATMENT.—Give the pig three grains of powdered sulphate of copper, or three drops of Fowler's solution, or ten grains of sulphate of iron, at a dose in feed three times a day; or give two grains of quinine at a dose four times a day. Fairly good results follow steaming with creosote or carbolic acid twice a day. Also, wash out the nostrils with salt and water, using a tablespoonful of salt in a quart of water and these applications should be made twice a day.

MALIGNANT CATARRH.—When a hog suffers from a bad attack of malignant catarrh and has been given good care and the right kind of treatment it is often better to destroy him than to take chances of his infecting other pigs.

SYMPTOMS.—There is a heavy discharge from the nostrils and eyes, the eyelids swell and the mucous membrane of the mouth and throat becomes inflamed. The pig has fever, loses flesh, and if the disease is not checked he dies.

TREATMENT.—Give castor oil to open the bowels. Give four grains of quinine at a dose four times a day. If he coughs give 20 drops of laudanum and steam the nostrils.

DISEASES OF THE SKIN.

(Including Prurigo, Surfeit, Mange, Scaly Disease, Lichen, Measles, Scarlet Fever, Ringworm, Erysipelas, Lice, Etc.)

PRURIGO.—

SYMPTOMS.—This is an eruption that causes great itching. It usually appears on the neck and shoulders and the pimples are almost of the same color as the skin, but by passing the hand over the skin it is found to be rough.

TREATMENT.—It must be the result of faulty digestion; therefore, it is always good practice to give an ounce or two of sulphate of magnesia to open the bowels promptly. Also give four drops of Fowler's solution and twenty drops of syrup of iodide of iron at a dose in feed or water three times a day. The coal-tar preparations mixed with four parts of vaseline help such cases. Dissolving baking soda in water and applying it to the sore parts two or three times a day helps to take out the itching. This treatment will do for most skin eruptions of the hog.

PEOPLE'S HOME REMEDIES FOR SORES BACK OF PIGS' EARS.—

1. **Kerosene and Sulphur.**—Sometimes the pigs get sore back of the ears and have a discharge of a yellow matter with an offensive smell. Give the hog a teaspoonful of sulphur once a day and rub kerosene oil on the affected parts.

PEOPLE'S HOME REMEDIES FOR "CANCER OF THE TAIL."—

1. **Preventive.**—Feed the sows lightly for a couple of weeks after farrowing. Equal parts of bran and shorts is a good feed. Also feed the sow a teaspoonful of sulphur three times a week.

2. **To Keep Tail from Falling Off.**—Mix one part of carbolic acid with twenty parts of sweet oil and apply to the sore parts.

SURFEIT—NETTLE RASH—URTICARIA.—This is a skin eruption that is never contagious but is very common in pigs.

CAUSES.—It is generally brought on by feeding the pig on the same kind of food for too long a time, or by feeding him too much starchy food. It must be the result of deranged digestion.

SYMPTOMS.—There is a sudden appearance of many elevations of the skin that seem to itch and if these pimple-like buds do not disappear soon the disease assumes a sort of chronic form and hard bunches form, continue to swell, soften, and discharge a glue-like fluid. In this second form of surfeit there may be loss of appetite and a sort of unthriftiness.

TREATMENT.—Discontinue feeding nutritious food for a few days. Give a cathartic to clean out the bowels. The dose of epsom salts is from one to two and a half ounces and one dose is usually enough to move the bowels. Apply one part of bi-chloride of mercury and five hundred parts of water to the sore parts five or six times a day. This will take out soreness. Or, dissolve one-fourth pound of sugar of lead in a gallon of water and add eight ounces of laudanum, if the itching is intense, and apply to surfeit buds four or five times a day. If the skin does not clean up in a few days give twenty drops of fluid extract of sarsaparilla and four drops of Fowler's solution at a dose in feed or water three times a day.

MANGE.—Mange is a parasitic ailment of the skin. It is readily communicated from one pig to another and has been known to be given to man.

SYMPTOMS.—There is severe itching on account of the parasite's burrowing under the outer skin. Because of this the pig is in misery. Scabs form and from rubbing there are some large sores on the body but these soon heal when the parasites are killed.

TREATMENT.—Wash the pig with soap and water and if you have soft soap use it. Rub on flower sulphur and apply it daily; also, apply any of the coal-tar preparations that have a good reputation. A good remedy is staves-acre seeds, two ounces in boiled water; or an infusion of tobacco applied twice a week. One part kerosene and two parts vaseline will help cure mange; or apply one part sulphur and two parts lard daily for a few days. When applying coal-tar disinfectants for mange, make the solution one part to ten of water.

SCALY DISEASE OF THE SKIN.—The skin of the hog when subjected to the hot sun in summer and to the zero weather of winter very often scales and becomes rough.

SYMPTOMS.—First, pimples appear and there oozes out a fluid which hardens and seems to cause the skin to come off in flakes. This is the most common skin disease in hogs.

TREATMENT.—If the pig is fleshy give it a dose of physic, feed less grain and more cooling laxative food, and apply one part of oxide of zinc and three parts of vaseline to the sore parts of the skin once or twice a day. Give four drops of Fowler's solution and three grains of iodide of potassium at a dose in feed two or three times a day. Dissolve one-fourth pound of sugar of lead in one gallon of water and apply three times a day. Many of the simple home remedies are good.

PEOPLE'S HOME REMEDIES FOR REMOVING SCURF.—

1. Buttermilk.—Wash the pigs each day with buttermilk until the scurf is entirely removed.

LICHEN.—When the skin is covered with a great many small pimples around the hair follicles, in sort of patches, we are led to believe the pig is suffering from lichen. The hair usually falls out and the skin scales some, but in a few weeks the hair commences to grow again.

TREATMENT.—Give two-thirds of a teaspoonful of sulphur, ten grains of saltpeter and one-half teaspoonful of baking soda at a dose in feed three times a day. Wash the pig with baking soda and water.

MEASLES.—Measles is a very common ailment in pigs and it is very contagious.

SYMPTOMS.—It is generally attended with a cough, some sneezing, and loss of appetite in severe cases, but in mild cases the pig is not noticeably sick. There is some sore throat and a rash breaks out on the fourth day but if the skin is not white this might be overlooked. If the disease is severe the eyes become inflamed, the lids swell, the temperature rises, the pulse becomes quick and there is fast breathing. About the eighth day the disease begins to subside.

TREATMENT.—It is unnecessary to treat mild cases, other than to give them good care and see that the bowels move freely; if not, give sulphate of magnesia in small doses; also give nitrate of potash to reduce the fever. If there is coughing give any good home-made cough remedy, or give laudanum. In some cases the pig suffers from weakness; if so, give tonics and

stimulants such as whiskey and quinine and if the pig has diarrhea, give opium; but keep in mind that if the pigs are not exposed to storms and too much wet and filth when they are sick they need very little if any medicine.

SCARLET FEVER.—This is a contagious disease which runs its course in seven or eight days and is very often diagnosed as measles; however, the symptoms are not alike but it requires some experience to tell the difference.

SYMPTOMS.—The first indications of sickness are dullness, stiffness, a fast pulse, fever, great thirst, loss of appetite, vomiting, stupor, delirium and sometimes convulsions.

TREATMENT.—It is well to keep in mind the fact that a great many pigs have suffered from scarlet fever and recovered without treatment. It is also a fact that many hogs are given medicines for scarlet fever that could in no way assist nature in throwing off the poison of this disease. Look after the general comfort of the pig and see that he has good care. If the bowels are costive, give castor oil or epsom salts, but in small doses, for if the bowels get to acting too freely you may find it troublesome to stop the purging. If the throat is sore, dissolve twelve grains of chlorate of potash in two ounces of water and gargle the throat four times a day. If the pig shows much weakness give whiskey and quinine three times a day; or, give carbonate of ammonia in fifteen-grain doses three times a day.

RINGWORM.—Ringworm is not common in pigs; however, we do meet with cases of it. It is due to the presence of a vegetable parasite and of course spreads rapidly when meeting with a suitable abode.

SYMPTOMS.—When the hair drops out of the skin in ring-like patches and the center becomes dry and the edge moist, the ringworm parasite is generally present. This disease is contagious to other pigs and likewise to man, but man is easily cured for these parasites do not seem to live a great length of time in him.

TREATMENT.—Iodine ointment is a remedy, but before applying it wash the sores with soap and water. Another remedy is to dissolve one ounce of carbolic acid in four ounces of alcohol and apply to the sores twice a week. It will often effect a cure. Sulphur, one part, and lard, two parts acts well.

ERYSIPELAS.—

CAUSES.—There can be little doubt that this disease is due to an organism and it seems to follow wounds or injuries to the skin when there is an abrasion sufficient to allow germs to be picked up and pass into the circulation and infect the pig. Certain animals seem to be easy victims of this ailment. It seems to be influenced by diet and exposure. The disease may be said to be both local and constitutional. This being a contagious disease, the sick should be kept away from the well hogs.

TREATMENT.—The bowels should be opened with either castor oil or epsom salts; also, give aconite to reduce the fever; or, give nitrate of potassium. To relieve the pain give opium and it is good practice to give tincture of chloride of iron in twenty or twenty-five-drop doses every few hours. Feed milk, oatmeal or eggs and if very weak give quinine and whiskey. When blisters form, open them. This will keep the skin in better condition than if they are left alone. Be sure to let the pig have plenty of fresh water.

WARTS.—Warts are caused by some deranged condition of the outer skin and soon the true skin becomes diseased and thickens. When a wart

meets with friction, causing it to bleed, it grows, sometimes to quite a size. Some warts seem to spread out and cover considerable surface of the skin.

TREATMENT.—If the wart has a well-defined neck, cut it off; if large, it will bleed some and to prevent this heat a piece of knife-shaped iron red hot and burn off the wart instead of cutting it. The hot iron stops hemorrhage. Or, tie a string around its neck, leaving it for a few days and if it does not slough off, tie on another string and leave it on until the wart drops off; then apply nitrate of silver or carbolic acid, or terchloride of antimony, or one part of chromic acid and five parts water. These caustic applications will kill the roots.

LICE.—When swine are infected with lice they soon commence to lose flesh and grow thin, but lice are so easily gotten rid of that no hog need have them.

TREATMENT.—Apply coal-tar disinfectant, one part to twenty of water, once a day or boil stavesacre seed and make a decoction and it will kill lice quickly. Or, use a decoction of tobacco. Fairly good results follow the use of one part kerosene and ten parts of soap suds. Or, light applications of fish oil will drive off lice.

PEOPLE'S HOME REMEDIES FOR LICE.—

1. **Coal Oil and Lard.**—Rub the hogs with a mixture of equal parts of coal oil and lard if they have lice. Repeat in a week or ten days.
2. **Kerosene.**—Rub with kerosene oil and repeat in ten days.
3. **Carbolic Acid Solution.**—Rub the hogs with one part of carbolic acid diluted with thirty parts of water and you will kill the lice. Better repeat in a week.



HOW TO GIVE MEDICINE TO A HOG.

(Photographed at Dr. Fair's "Mentor Stock Farm" especially for this book.)



SPAYING A SOW.

(Photographed at Dr. Fair's "Mentor Stock Farm" especially for this book.)

DISEASES OF THE GENERATIVE ORGANS.

(Including Farrowing or Piggling, Eversion of Womb, Inflammation of Womb, Inflammation of Udder, Castration, Etc.)

FARROWING OR PIGGING.—The usual time for gestation in sows if they are strong and healthy is a little less than four months. A weak, young sow pigs earlier. Six weeks after a sow has been served she begins to get big and heavy, growing more so until she farrows. While pregnant she should be well fed and allowed to exercise and her bowels should be moderately open when she farrows. She should be kept in a pen with the temperature from 60 to 70 degrees until her pigs dry, then it is not necessary to keep them as warm as when they were born. Young pigs chill easily and cold pens for brood sows cost their owners money on account of the death of the pigs. The sow should have plenty of short bedding with which to make a nest before she farrows.

SYMPTOMS.—When the sow begins to make preparations for piggling she is uneasy, gathers straw and arranges it for her nest, lies down and expels her pigs. Of course the water bag breaks first. The forefeet first with the nose between them is the proper position for a young pig. Should you be obliged to help her, put the pig in the natural position, oil the passage with carbolized lard and if the hand is used instead of instruments it should be a small hand. I prefer to use instruments. Pigs can be taken away hind feet first.

PEOPLE'S HOME REMEDIES TO PREVENT AND CURE EATING OF PIGS.—

1. **Preventive and Cure.**—Make a mixture of equal parts of salt, sulphur, charcoal and wood ashes and keep this before the sows all the time and especially at piggling time. This is a preventive but if they have begun eating the pigs, give them all the salt pork they will eat.

EVERSION OF THE WOMB.—This is where the pig bed is turned out on account of the sow's being weak at farrowing time or getting into a position where the hind parts are much lower than the fore parts or on account of the vagina being large and the uterus slipping into it and turning inside out.

SYMPTOMS.—The uterus, or pig bed, when turned out is quite large. It is red and inflamed and this cannot be mistaken for any other ailment.

TREATMENT.—In the first place the womb should be kept clean and not injured. Bathe the parts with cold water to somewhat reduce the swelling. Then elevate her hind quarters and return the uterus, but before doing so, pour on a one per cent. solution of carbolic acid and water. This is made with one part of carbolic acid and 99 parts water. Or, use one part bi-chloride of mercury and twenty-five hundred parts of warm water, or one part coal-tar and fifty parts of water. As soon as the parts are in place sew up the upper part of the vulva and give the sow a teaspoonful or more of laudanum every two or three hours to keep her from straining. Her bowels should be kept open and, if necessary, give epsom salts, three or four ounces a day. The hind parts in some cases should be kept higher than the fore parts.

INFLAMMATION OF THE WOMB.—This is likely to come on after eversion or where the sow was improperly helped during farrowing, or kept in a cold, damp, filthy pen or place after farrowing. I have known it to come on without any well-known cause.

SYMPTOMS.—The symptoms are loss of appetite, dullness, thirst, pain and fever. The vulva usually swells and there is some vaginal discharge.

TREATMENT.—Give aconite to reduce the fever, or saltpeter acts well. Wash out the womb with boric acid and warm water, as much acid as the water will dissolve, and run it through a rubber tube with a funnel. Give laudanum or belladonna to quiet the pain and keep the bowels loose. Feed cooling, laxative food.

INFLAMED UDDER.—

CAUSES.—Improper care, a wet bed, exposure to cold, over-feeding and the loss of a part or the whole of a litter are the causes.

SYMPTOMS.—There is some loss of appetite, fever, shrinkage in milk and a hard and tender udder.

TREATMENT.—Give epsom salts as a cathartic and some saltpeter three times a day. Foment the udder with hot water three times a day and rub with camphorated oil daily.

CASTRATION.—When I was raising pigs myself I made it a practice to castrate them when they were two or three weeks old and I do not now recall that any of them had not fully recovered from the shock before weaning time, but in my practice I have been called upon to castrate them at all ages and the older they are the more it seems to affect them. Therefore, I urge you to castrate pigs early for there is then much less risk. When you get ready to castrate the pigs, mix one part of carbolic acid and fifty parts of water, lay your knife in it, wash the pigs scrotum with the same, also dip your hands in it. Put the pig on his back in a furrow or trough and tie or hold his legs or, if he is small, your assistant can hold his head between his knees. Place the left hand under the testicle, making a bold incision and allowing the testicle to escape; separate the covering from the testicle; tie a piece of catgut, silk or linen thread tightly around the cord to stop bleeding; let the ends of the thread hang out of the scrotum a few inches but cut off the cord leaving one-half or three quarters of an inch below the string and in a few days the string will drop off or may be pulled off. The knife and operator's hands should be cleaned before another pig is operated on. When operating on a ruptured boar the hind quarters should be placed a few inches higher than the fore quarters. The pig should be empty and, if you are operating on an old boar your work will be made much easier if he is quite empty. After cleaning the scrotum, cut through the skin but not the last covering of the testicle; separate this from the outer covering and force the testicle out; then place a string around the cord three inches above the testicle and cut off the cord, leaving it an inch longer than in simple cases and also be sure the string is tight for if it slips off the bowel may come out. In badly ruptured boars it is a good plan to stitch the wound in the scrotum and also to keep him empty until the string comes off and the wound heals besides, they should be kept by themselves in a quiet place and one part of carbolic acid and thirty parts of water should be applied to the wound twice a day. Young pigs may be allowed to run with others after this operation.

VARIOUS DISEASES.

(Including Thumps, Rheumatism, Founder or Sore Feet, Diseases of the Eye, Brain Troubles, Apoplexy, Blind Staggers, Paralysis, Chorea, How to Tell the Age of Hogs, and General Rules as to Care, Feeding and Raising of Hogs.)

THUMPS—PALPITATION OF THE HEART.—

CAUSES.—This is an ailment which most generally attacks young pigs that are fleshy and do not have enough exercise. It is perhaps the result of a spasmodic contraction of the diaphragm and just what should bring this on is none too well understood, for it seems to attack the finest looking ones of the litter. A morbid condition of the system causes it, also worms and feeding food which does not contain sufficient nitrogen.

SYMPTOMS.—The pig is taken with a sort of hiccough and jerking of the body with palpitation of the heart and there may be spasms of the diaphragm as well; however, it is not easy to tell.

TREATMENT.—More can be done in the line of prevention than curing the diseased ones. If the sow is a deep milker and the pigs are too fat, purge her and reduce her food allowance. Also see that she and her pigs have more exercise. If their bowels need attention, give either epsom salts or castor oil to open them. It is always wise to diet the sow and pigs after one shows thumps for fear of more becoming affected. You will find digitalis a useful drug; or, give aromatic spirits of ammonia every hour or two. As soon as the pigs have some appetite feed them milk, eggs, and oat-meal gruel but not too much at a time.

RHEUMATISM.—This is a very common ailment of young pigs. Certain conditions of the body seem to be just right for them to become stiff and sore. Many veterinarians believe it to be the result of an acid, either lactic or uric; however, this is doubtful. Certain animals seem to have a predisposition to become rheumatic and when subjected to exciting causes they soon become sore and lame.

SYMPTOMS.—The fetlock joints very often swell, there is lameness in one or more legs, some fever, loss of appetite and, if there be much inflammation, the joints swell. Rheumatism may attack any organ of the body.

TREATMENT.—Give sulphate of magnesia to open the bowels promptly; also give ten-grain doses of iodide of potassium at a dose three times a day. In chronic cases give five drops of Fowler's solution at a dose in feed two or three times a day. Give ten grains of carbonate of potash or citrate of potash or sodium salicylate at a dose three times a day until you can notice some results, then give smaller doses or fewer doses a day. If the joints are swollen apply equal parts of extract of witch hazel, fluid extract of belladonna and tincture of opium twice a day. Equal parts of turpentine, aqua ammonia and sweet oil is another good liniment for rheumatic joints and it should be applied daily.

FOUNDER OR SORE FEET.—It is not unusual to find pigs walking very foot-sore, especially after walking far on a hard road or walking about

in a pen when fattening or when fed a large quantity of grain at a time when they were not accustomed to it. This brings on a sort of founder in hogs.

SYMPTOMS.—When a pig travels with the forefeet far in advance of the body and continually changes feet he is foot-sore.

TREATMENT.—If in summer, stand the pig in wet clay or sand to cool his feet; if in winter, apply hot poultices. Reduce his grain supply and feed cooling, laxative food, such as vegetables and grass. Give epsom salts to open the bowels and some saltpeter in the feed or water two or three times a day. If the sores appear between the toes or on the back part of the heel apply chloride of zinc and water, one dram to a pint; or, apply one part of carbolic acid and ten parts of water twice a day. Be sure to keep the pig in a clean, dry place.

WOUNDS.—Hogs are often wounded by dogs, by cattle hooking them, by kicks from horses wearing sharp shoes and by running against barbed wire fences and sharp snags.

TREATMENT.—Apply one part coal-tar disinfectant and fifty parts water, or one part carbolic acid and fifty parts water; or, dissolve one-fourth pound of sugar of lead, one-fourth pound of sulphate of zinc and two ounces of carbolic acid in a gallon of water, which makes a good and not too expensive healing remedy for wounds on hogs. A good healing powder is made by mixing equal parts of oxide of zinc, powdered alum and boric acid. This should be applied twice daily.

AMAUROSIS—PARALYSIS OF THE RETINA.—Amaurosis is a dilation of the pupil of the eye, usually lasting in its effects and giving the eye a glassy and greenish appearance. It causes blindness.

CAUSES.—The optic nerve is affected and there is generally some derangement of the digestive organs with, perhaps, some worms in the stomach.

TREATMENT.—A cathartic of castor oil or epsom salts with some worm medicine will give relief if any treatment will. It is also necessary to keep the pig in a dark pen which is free from foul gases.

DISEASES OF THE EYEBALL.—The eyes of pigs seem to be as exempt from eye diseases as those of any other domestic animal; however, they are sometimes troubled with inflamed eyes, the result of exposure to cold, heat and sunshine. Living in acrid, nasty vapors and also foreign bodies making their way into the eyes are other causes.

SYMPTOMS.—Whenever the tears flow over the cheek or the eye seems inflamed it is well to make an examination and ascertain if any foreign body is in the eye.

TREATMENT.—Simple ophthalmia usually results from injuries which cause an inflammation of the eyeball and mucous membrane of the eye and is best treated by placing the pig in a dark pen or shaded place and applying hot water. Follow with applications of boric acid and water, just as much acid as the water will dissolve; or, dissolve fifty grains of sugar of lead in one-half pint of rain water, add a teaspoonful of laudanum and apply three times a day. When the acute inflammation subsides a film or scum covers the eye. If this is the case, blow some calomel into the eye once a day or dissolve four grains of nitrate of silver and one grain of sulphate of atropia in one ounce of rain water and apply to the eye daily.

PHRENITIS AND MENINGITIS—INFLAMMATION OF THE BRAIN AND ITS MEMBRANES.—Phrenitis, or inflammation of the brain,

and also meningitis, or inflammation of the membranes of the brain, give rise to very much the same symptoms; therefore, we shall not need to take up each separately as nearly all the parts are involved when one is inflamed.

CAUSES.—It can be safely stated that over-feeding on rich nutritious food without the pig's having enough exercise and fresh air is the most common cause of these ailments. They are also caused by injuries, other diseases, feeding improper food, over exertion and a faulty circulation.

SYMPTOMS.—There is generally dullness, loss of appetite and staggering and these are followed by delirium and in some cases vomiting. The pulse is fast and full. I have seen them chase chickens and run into things.

TREATMENT.—First of all, remove the cause as quickly as possible if you can tell what it is. Give two or three ounces of epsom salts to open the bowels. Give four drops of tincture of aconite every three hours, but discontinue it if the pig vomits. Put ice packs on the head and keep them on until the pig is better and apply some strong liniment at the junction of the spinal cord and brain twice a day.

APOPLEXY.—This derangement is an ailment in hogs confined almost exclusively to those that are too fat.

SYMPTOMS.—The attack comes on suddenly; if eating the hog will stop and appear restless and act stupid; the eyes are blood-shot and prominent and in a few moments the hog may fall, froth at the mouth and soon get up. Other cases prove fatal.

TREATMENT.—I have known many recoveries to follow bleeding from the veins of the leg, but these cases might have recovered without treatment. When you bleed a hog suffering from apoplexy, tie a string around the foreleg above the knee, open the vein on the inside of the leg and be sure to use a clean knife or lancet. If it is a bad case, open the other vein of the foreleg and take away not less than a pint; or, perhaps one-half pint more can be taken away to advantage. To close the wound use a clean pin, passing it through both edges, and tie a string back of the pin; this will prevent bleeding. In most cases it is good practice to give two or three ounces of epsom salts and reduce the food supply. If it occurs in summer, place the hog in a cool place and apply cold water to the head.

PEOPLE'S HOME REMEDIES FOR EPILEPSY.—

1. **Aloes and Potassium Bromide.**—Give one dram of aloes and follow with ten-grain doses of potassium bromide.

BLIND STAGGERS.—This ailment is brought on by generous feeding and keeping hogs in badly ventilated and filthy pens.

SYMPTOMS.—The hog is stupid, does not see well, runs against things, moves in a circle and is likely to fall. It is sometimes caused by effusion in the brain and may develop quite suddenly. After he falls there is considerable frothing at the mouth with hard breathing, jerking and stiffening of the limbs.

TREATMENT.—Apply cold water to the head, place the pig in a comfortable place and give a dose of epsom salts. If the pig is less than three months old a tablespoonful of salts is a large enough dose. If he is weak give a teaspoonful of sweet spirits of nitre and a dessert spoonful of whiskey in cold water as a drench; and if high feeding and filth has caused it, reduce the grain ration for a few days; also give the pig a dose of epsom salts once a week for thirty days and keep the hog in a dry clean pen.

PEOPLE'S HOME REMEDIES FOR BLIND STAGGERS.—

1. **Cold Water.**—Pour cold water on the head.

PARALYSIS.—This is a common ailment in pigs, mostly affecting the hind limbs and resulting in either partial or complete loss of power of the limbs.

CAUSES.—It is not always easy to tell what causes paralysis; however, it is generally the result of accident, some error in feeding or some other sickness or disease.

TREATMENT.—If it is the result of a fractured back, destroy the hog; but if the loss of power is only partial and the hind quarters possess sensation, then apply hot applications to the back or apply some good home liniment, or mustard and water daily; or, apply equal parts of turpentine, aqua ammonia and either sweet oil or raw linseed oil once a day. Give six or eight drops of fluid extract of nux vomica and one-half teaspoonful of fluid extract of buchu at a dose three times a day. The bowels should be opened by giving castor oil or epsom salts and the hog should be fed laxative food.

CHOREA.—Chorea is a disease of the nervous system, characterized by involuntary and convulsive muscular movements of one or more parts of the body. The contractions are not rigid and persistent as in lockjaw but appear as though they were voluntary movements.

CAUSES.—There is an excited state of the nervous system, perhaps the result of perverted nutrition of the nerves in the part affected or possibly due to defective nutrition of the body. However, I have seen pigs and old hogs affected with chorea that did not appear to be unhealthy; therefore, it is not easy to tell what brought it on.

TREATMENT.—I have obtained the best results by giving Fowler's solution in four or five-drop doses and sub-carbonate of iron in one-quarter to one-half-dram doses three times a day, or five drops of tincture of nux vomica three times a day.

HOW TO TELL THE AGE OF A PIG.—At birth the young pig usually has eight teeth, four temporary incisors and four tushes; at ten or twelve days old the second and third temporary molars appear; at 30 days, four incisors are out, two in the upper and two in the lower jaw; at the sixth or seventh week the front molars can be seen and at three or three and one-half months, four more are in, two in each jaw; now all the temporary or milk teeth are in. At six or seven months a tooth appears just behind the temporary tushes on both sides and in the upper jaw just in front of the grinders we also find the fourth molar coming through the gum. At nine months the corner incisor teeth are displaced and the permanent ones come in their place; also, the permanent tushes come at this time and the fifth grinders on each side of the jaws come at this time. At twelve months the middle incisors are replaced by permanent ones and the temporary incisors are shed and replaced by permanent ones, and at eighteen months the hog has a full set of teeth as the lateral incisors and sixth molars are up and in good order. In estimating the age of a pig it is well to take in his general appearance for some of them have a full set of permanent teeth a month or six weeks earlier than others.

PEOPLE'S HOME REMEDIES FOR KEEPING HOGS IN HEALTH.—

1. **Salt and Lime.**—Mix equal parts of salt and air-slacked lime and

keep this mixture before the hogs all the time if you would keep them in good health.

2. **Sulphur and Charcoal.**—Occasionally feed the hogs a little sulphur in their feed. Also keep plenty of charcoal where they can get it whenever they desire.

3. **Salt and Ashes.**—Feed salt and ashes at least once a week if you would keep them in health.

4. **Soft Coal.**—Feed the hogs all the soft coal they will eat and they will eat a lot of it.

5. **Tobacco.**—A teaspoonful of tobacco once a week will keep the hogs in good condition.

6. **Burnt Corn.**—Burnt corn is a good form of charcoal to give the hogs.

PEOPLE'S SUGGESTIONS AND RULES AS TO THE CARE, FEEDING AND RAISING OF HOGS.—

1. The pens should be warm but well ventilated at the top.

2. The floor of the pen should be covered with a foot of clay.

3. The feeding floor should be open to the sun but should have a good slope so as to carry off the rain.

4. The surrounding ground should slope away from the pen so as to carry off water and refuse.

5. The hogs should at all times have access to a stream of pure running water.

6. The stomach should be kept in good condition and not overloaded.

7. Hogs fed on corn should also have green food and sour slop may also be fed to advantage.

8. If the hogs are kept on clover they should not have slops but should have potatoes, turnips or other roots.

9. If the tongues are contracted and red the hogs should have some slops or should be turned on clover.

10. If the tongues are large, pale and flabby the hogs should have corn and cooked roots and should be given soda in the feed.

11. Where the hogs are kept on clover, and root vegetables cannot be given them, they should have plenty of soda and lime.

12. Keep their pens clean and free from lice and at once separate any sick ones from the rest of the herd.

13. See that they have plenty of charcoal, ashes, and salt.

14. In case of disease use disinfectants freely.

POULTRY.

(Including Roup, Pip, Gapes, Diphtheria, Bronchitis, Catarrh, Canker, Crop-Bound, Inflammation of Egg Passage, Vertigo, Rheumatism, Scaly Legs, Leg Weakness, Worms, Diarrhea, Chicken Cholera, Contagious Bowel and Liver Disease, White Diarrhea, Lice, Caponizing and Valuable Poultry Secrets.)

ROUP.—

CAUSES.—Roup is caused by a micro-organism and of course is a highly contagious disease and one that is quite destructive to poultry. It is supposed to result from other debilitating diseases but this is a mistake.

SYMPTOMS.—The early symptoms are much the same as in catarrh, the discharge being thick, sticky and offensive. The eyelids swell, the sides of the face bulge and the bird seems to grow weak rapidly and if the disease is not checked death results.

TREATMENT.—When this contagious disease exists in a small flock of chickens that are of small value it is often good business judgment to kill and burn every one of the fowls for, all things considered, it is the least expensive way out of the trouble. The healthy and well birds should be moved away at once to a clean place and the diseased ones treated where they are. This will prevent spreading the contagion. Give at once a dessert spoonful of castor oil and repeat in twelve hours if it does not act. Put a teaspoonful of carbolic acid and a tablespoonful of glycerine into a pint of water and syringe some into the slit in the roof of the mouth twice a day. Put some finely powdered boric acid into the eyes daily and drop a small quantity of calomel into the eyes three times a week. Some poultry raisers use kerosene and others use one dram of sulphate of copper dissolved in a pint of water and inject into the nose once a day. The coop and all food and water dishes should be either scalded or disinfected before they are used. One part carbolic acid and fifty of water or one part coal-tar disinfectant and thirty of water are the right proportions. If you do not thoroughly disinfect and clean the poultry house, do not keep other well poultry in it for three or four months.

PEOPLE'S HOME REMEDIES FOR ROUP.—

1. **Carbolic Acid, Etc.**—The eyes, mouth and throat should be bathed with a solution of ten grains of carbolic acid in an ounce of water. Feed soft feed in which is mixed either black or cayenne pepper. Also put a few drops of hartshorn into the drinking water. Keep in a clean warm place.

2. **Sulphur and Lard.**—Mix sulphur and lard, make into pills and put a pill into the throat of each chicken that has the roup.

3. **Coal Oil.**—Hold the chicken's head under coal oil until it breathes once.

PIP.—This ailment usually follows sore mouth, a crust or scale forming on the tip of the tongue which seems to be irritated from the fowl's breathing through the mouth when the head is stopped up from catarrh or cold in the head.

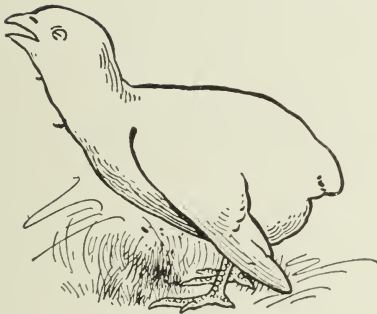
TREATMENT.—Soften the scale by applying either sweet oil, gly-



ROUP.



SCABIES.



GAPES.



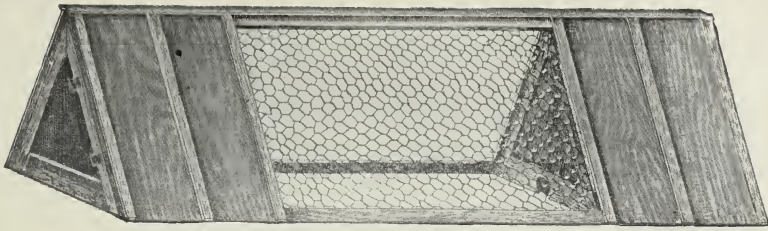
CHOLERA.



GAPE WORMS IN WINDPIPE.



SCALY LEG.



"A" COOP.



PORTABLE COLONY HOUSES.



OPEN FRONT POULTRY HOUSE.

When kept in open front houses poultry is remarkably free from disease. A canvas curtain is dropped when weather is below zero.

cerine or cream and wash out the mouth with a solution of boric acid and water, which is made by dissolving all the boric acid the water will absorb. Or, put one ounce of chlorate of potash and two drams of borax into one quart of water and wash out the mouth twice a day. If the bowels are costive give a teaspoonful of castor oil daily until they open.

PEOPLE'S HOME REMEDIES FOR PIP.—

1. **Butter and Scotch Snuff.**—Remove the thickened membrane from the tongue with the finger nails. Make some pills by mixing Scotch snuff with butter and put two or three of these pills down the chicken's throat. Keep the chicken from the cold and damp.

2. **Butter, Pepper, Garlic and Horseradish.**—Make some pills by mixing some butter, pepper, garlic and horseradish and, after removing the lump from the tongue, put two or three of these pills down the chicken's throat.

GAPES.—

CAUSES.—This ailment is caused by a small red worm which lodges in the windpipe of chickens from two to five months old. This worm is generally closely attached to the lining of the windpipe. The male is about one-fourth of an inch in length and the female is almost twice as long and they are very often found close together.

SYMPTOMS.—When chickens have gapes they usually open and close the mouth frequently. In very bad cases they cough, seem droopy, show great weakness and soon die. When opened the worms are found without trouble.

TREATMENT.—In order to cure the gapes you must be able to kill the worms that are causing it. Take a small swab or stripped feather, dip it into either tincture of chloride of iron or turpentine and insert it in the opening to the windpipe at the base of the tongue and turn it around very gently a time or two and then withdraw. This will perhaps be all that is necessary to effect a cure. In very young chickens apply one part of turpentine and four parts of lard or vaseline to the throats daily. Season the food with pepper, onions, ginger or gentian, adding some asafetida. Separate the sick and well and keep the fowls in a dry place. Use disinfectants freely and burn the droppings of the sick ones.

PEOPLE'S HOME REMEDIES FOR GAPES IN POULTRY.—

1. **Smoking with Tobacco.**—Put the chickens into a box containing a pan of live coals upon which has been sprinkled some fine cut tobacco. The pan should be fixed so that the chickens cannot get into it and the box should be covered with an old sack or piece of carpet. The chickens should be left in the box until they become drunk or stupefied but not long enough to smother them. The first time you try this treatment you will think you have killed all your chickens but if they are watched and not smoked too long there is no danger and the chickens will revive when fresh air is admitted. The tobacco smoke kills the little red worms in the throat which are the cause of gapes. This treatment never fails.

2. **Air-Slacked Lime.**—Put the chickens into a tight box and over this spread a piece of cloth and through this sift some air-slacked lime. The air in the box will thus be full of fine particles of lime and breathing this will kill the little worms that cause this disease. Do not leave the chickens in the box long enough to smother them.

3. **Camphor.**—Put camphor in the drinking water if you would cure the chickens of gapes.

4. **Tallow and Oatmeal Porridge.**—Melt a tallow candle and mix with a quart of thick oatmeal porridge and feed to the chickens.

5. **Turpentine.**—Give the chick five or six drops of spirits of turpentine three times a day until cured. Another way to administer the turpentine is to dip a feather into the turpentine and then carefully swab out the throat or windpipe. This must be done with care.

6. **Carbolic Acid.**—Put some carbolic acid into a large spoon and hold over a lamp. Hold the chicken's head over this until it breathes in enough of the fumes to become almost suffocated. This will kill the gape worms that cause the trouble.

7. **Sulphur and Alum.**—Mix two parts of sulphur with one part of pulverized alum and blow this mixture down the throat. This may be repeated two or three times if necessary.

8. **Soft Soap.**—Make some pills by mixing some soft soap with dough and give each chicken one of these pills.

DIPHTHERIA.—This disease gives rise to many symptoms which are similar to roup or contagious catarrh. It is necessary to make a close examination in order to distinguish between the two diseases. Being a contagious disease it is spread in much the same manner.

SYMPTOMS.—In addition to the symptoms of roup, the tongue, mouth, throat and windpipe are covered with false membranes which present a grayish color and when removed the parts underneath are left raw and usually bleeding. This condition we do not as a rule find in roup.

TREATMENT.—The treatment should be similar to that for roup but the tongue and mouth should be treated with one part glycerine and three parts tincture iodine twice a day for a few days. Then apply either sweet oil or glycerine. Put a dessert spoonful of carbolic acid into a pint of water and use it the same as for roup. I have obtained fairly good results by using protargol and water, also permanganate of potash and water, and thought that coal-tar disinfectant applied full strength helped effect a cure. Sickly, weak children, and in fact all young children, should be kept away from them. This disease, however, differs from diphtheria in man and if contracted is not nearly so dangerous.

BRONCHITIS.—

CAUSES.—When catarrh of the upper air passages extends into the tubes of the lungs it is called bronchitis.

SYMPTOMS.—If you listen with the ear at the breast, a wheezing sound will be heard. The fowl holds the head high, coughs some, is dumpish and a bad odor comes from the nose.

TREATMENT.—Make the fowl as comfortable as possible by placing it in a clean, well ventilated place. Dip the nose into one part of peroxide of hydrogen and four parts of water twice a day. Steam the head with carbolic acid and hot water once a day. Put one-half ounce of chlorate of potassium and one-fourth ounce of citrate of iron into a gallon of drinking water and let them have what they want. If the bowels are costive give a teaspoonful of castor oil twice a day until they move freely.

CATARRH.—

CAUSES.—Poultry that are kept in damp filthy houses or coops and roost in windy places are very likely to suffer from catarrh.

SYMPTOMS.—The eyelids usually swell some. At first a watery discharge comes from the nose to be followed later by a thicker mucus and the

face on each side generally swells some. In bad cases the fowls breathe with a little difficulty.

TREATMENT.—As soon as possible remove the fowls to a dry comfortable place which is free from drafts and feed them easily-digested food, highly seasoned with either black or red pepper or ginger. Wash out the mouth, nostrils and eyes with a saturated solution of boric acid. This is prepared by dissolving as much boric acid as the water will take up and it should be applied twice a day. One part peroxide of hydrogen and four parts of water applied to the mouth and nostrils removes the mucus and makes breathing easier and thus assists in bringing about a recovery.

PEOPLE'S HOME REMEDIES FOR EPIZOOTIC.—

1. **Tar and Asafetida.**—Mix some tar and asafetida and give ten drops twice a day in the feed. Also feed a warm bran mash once a day.

CANKER.—

CAUSES.—Feeding chickens filthy, putrid and diseased meat and keeping them in coops that are filled with foul gas and in unsanitary quarters of any kind are likely to induce canker in fowls. Musty, badly-cured grain that has been kept in damp places also seems to cause canker.

SYMPTOMS.—Suppurating sores on the top of the head and also in the mouth and throat, with some discharge from the eyes are the leading symptoms of canker.

TREATMENT.—Wash the sores with peroxide of hydrogen, one part, and water three parts, twice a day. Ten minutes later apply boric acid and water, as much acid as the water will absorb; or, one part of carbolic acid to thirty parts of water should be carefully applied to the ulcers twice daily. Touching the sore with one part of sulphate of copper and fifty parts of water helps heal them. Any good family mouth wash or healing powder will help heal canker sores in chickens.

CROP-BOUND.—

CAUSES.—Chickens that swallow pieces of bone or sticks and eat too much food that is dry, which, when meeting with moisture becomes a hard mass, are the fowls which suffer from crop-bound.

SYMPTOMS.—There is loss of appetite, dullness and drowsiness and the crop is bulged out and very hard.

TREATMENT.—Give castor oil, sweet oil, fresh butter or lard to soften the contents of the crop. Then hold the head down, hand-rub the crop and gradually work the food out of the body. If this fails, open the crop and remove its contents, then stitch up the crop and the chicken will soon be well. After this operation feed often but not much food at a time as the crop should not be distended too much until it is healed.

INFLAMMATION OF THE EGG PASSAGE.—It is not always an easy matter to tell what brings on an inflammation of the egg passage but, fortunately, it is not by any means a common ailment in poultry.

SYMPTOMS.—The symptoms are an inflamed inside of the passage and frequent straining. If the yolk of the egg is pressed out and is found covered with blood, the whole passage is then more or less irritated. The chicken has fever and the feathers appear dry and rough.

TREATMENT.—Give epsom salts to open the bowels; one-half teaspoonful is a full dose for a large chicken and the medicine should be given daily until the desired effect is produced. Also give one-fourth grain of calomel to act on the liver, and this medicine should be given twice a week for

two weeks. Feed vegetables instead of grain while the fowl has fever. A chicken of small value is hardly worth what it costs to treat it.

APOPLEXY.—Apoplexy is generally brought on by too generous feeding and insufficient exercise and is perhaps sometimes the result of straining in laying eggs. It is also induced by keeping fowls in close confinement in filthy coops where the air is foul.

SYMPTOMS.—The attack is sudden and death follows quickly. However, if the case is a mild one the chicken is dumpish and stupid for several days before it comes on.

TREATMENT.—More can be done in the line of prevention than in the way of curing. After the attack is on it is generally too late for treatment for the chicken soon dies. If the chicken is noticed to be dizzy or inclined to fall, apply cold applications to the head or let a stream of cold water run on the head for a few minutes. Give epsom salts to open the bowels and reduce the food supply, especially their grain ration.

VERTIGO.—

CAUSES.—This dizzy, fitty condition of fowls is generally the result of high feeding on rich nutritious food, want of exercise, too much hot sun or worms.

SYMPTOMS.—The chicken usually runs in a sort of circle with the head high and frequently falls down.

TREATMENT.—As soon as possible apply ice water to the head or turn on a stream of cold water. Give a cathartic such as a dessert spoonful of castor oil or a few grains of jalap or one-half dram of either sulphate of soda or sulphate of magnesia or two tablespooonfuls of sweet oil or raw linseed oil. Feed vegetables and keep in a cool place, also make the fowls exercise some every day.

RHEUMATISM.—

CAUSES.—This comes from eating too much lean meat, running in tall wet grass, being out in rainy weather too much and roosting in foul damp places. It also comes from eating too much sour acid-producing food.

SYMPTOMS.—Shifting lameness is one of the most certain symptoms of rheumatic ailments. The foot or lower joints are most often affected.

TREATMENT.—A removal of the cause is the first step that should be taken in the treatment of this ailment. Keep the fowls in a dry place, change their food and if the bowels are costive give one-third teaspoonful of epsom salts or Glauber's salts to open the bowels. Also give two grains of salicylate of soda or the same quantity of salicylic acid; or, give either citrate or carbonate of potash in two-grain doses twice or three times a day. Apply equal parts of spirits of camphor, witch hazel and alcohol to the sore joints twice a day.

SCALY LEGS.—

CAUSES.—This ailment is the result of small parasites which burrow under the skin. It is a contagious disease; therefore, should not be neglected.

TREATMENT.—The coal-tar preparations applied full strength or kerosene applied to the legs every day or two will soon make them better. The diseased ones should be removed from the healthy and kept away until all the diseased poultry are cured. Apply kerosene about the hen coop and disinfect thoroughly or you will fail to stamp it out. It is a good plan to scrape and clean the legs thoroughly but, before doing so, soak the feet and legs in warm water and then scrape off the scales. Do not neglect to apply some kerosene to the legs occasionally, also some vaseline two or three times

a week until you are sure the fowls are free from disease. Washing the legs with soap and water, adding a tablespoonful of kerosene to each quart of suds, will keep the legs in good condition.

PEOPLE'S HOME REMEDIES FOR SCALY LEGS.—

1. **Crude Oil.**—Apply crude oil or blackstrap to the scaly legs.

2. **Kerosene and Lard.**—Mix a teaspoonful of kerosene oil with two ounces of lard and apply thoroughly to the legs of the chickens affected.

LEG WEAKNESS.—

CAUSES.—It is not always an easy matter to tell what is causing leg weakness in poultry. However, inbreeding, close confinement, want of sufficient outdoor air and exercise and lack of proper food to nourish the body are among the causes. Young male fowls seem to be the ones most likely to become affected and the larger breeds appear to suffer most. This ailment is very often a result of some other sickness and I have known of debilitated fowls, that had become so from being lousy, to be treated for leg weakness. It is well to keep in mind that poultry should be fed a balanced ration from the time they are hatched. If not, they may become rickety and leg weak.

SYMPTOMS.—The bird walks with difficulty, is inclined to stop and rest very often and in many cases is unable to stand at all. Strange to say, upon examination of the legs they are very often found free from pain or swelling.

TREATMENT.—Be sure to examine for lice of all kinds before prescribing treatment and, if possible, remove the cause for this may be the means of your success in making them well. To be successful in treating such an ailment you should first try hard to ascertain the cause. After a removal of the cause the symptoms will soon moderate and the fowl perhaps recover. Feed some meat, grain and vegetables; also give five grains citrate of iron at a dose twice a day; or give some copperas and phosphate of lime in their feed twice daily. Give them lime water to drink or give some lime in their feed. The dose of copperas is six or eight grains and ten grains of phosphate of lime is a dose. However, neither are very poisonous and larger doses can be given. Lime is a very common remedy for leg weakness but it should be air-slacked before it is fed. One-quarter of a teaspoonful at a dose is enough and it should be given once or twice a day. Be sure to allow the chickens to exercise, and feed them some vegetables.

WORMS.—Poultry that run on the same small lot year after year always get wormy and suffer from both round worms and tapeworms. It is true that many fowls do not have enough worms to interfere with their general health; however, a great many chickens have enough to prevent their growing as rapidly as they would if free from them.

SYMPTOMS.—If a chicken has many worms it will seem dull, sometimes purge, grow thin and lose condition, become uneasy and will not thrive. If the bowel movements are closely examined you will find the excrement contains many small worms and eggs. I suggest the use of your magnifying glass to determine whether the dung contains small worms, eggs or worm embryo.

TREATMENT.—For the round worms give a teaspoonful of castor oil to which has been added five grains of powdered kamala and ten drops of turpentine. Or, give three grains sulphate of iron and ten grains ground gentian; or, feed the fowls some pumpkin seeds or carrots either raw or cooked. I prefer to feed the carrots raw. Or, give santonine in doses of one, two, or

even three grains to a large chicken, once a day on an empty crop. If you are sure any of your fowls have tapeworms, do not feed them for 15 or 20 hours and then give five grains of powdered kamala, five drops oil male fern and eight drops turpentine in a teaspoonful of castor oil and it will be quite sure to bring the tapeworm away.

DIARRHEA.—

CAUSES.—This is caused by exposure to too much wet during cold weather, by filth, and by feeding on too much constipating food without exercise. It is also caused by eating early grass, roosting in damp places and is often the result of other ailments.

TREATMENT.—Feed well cooked barley meal and add some ginger, catechu and prepared chalk. In order to check the excessive bowel discharges give four drops of tincture of opium, four drops of spirits of camphor and three drops of fluid extract of cinnamon, every six hours until the medicine seems to produce results. Put sulphate of iron in their drinking water. If the fowl is not too weak when taken sick, a teaspoonful of castor oil will do good.

CHICKEN CHOLERA.—

CAUSES.—This contagious disease is caused by a micro-organism and is perhaps produced by crowding poultry into filthy, damp, ill-ventilated quarters and by forcing them to live on dirty, filthy and unwholesome food.

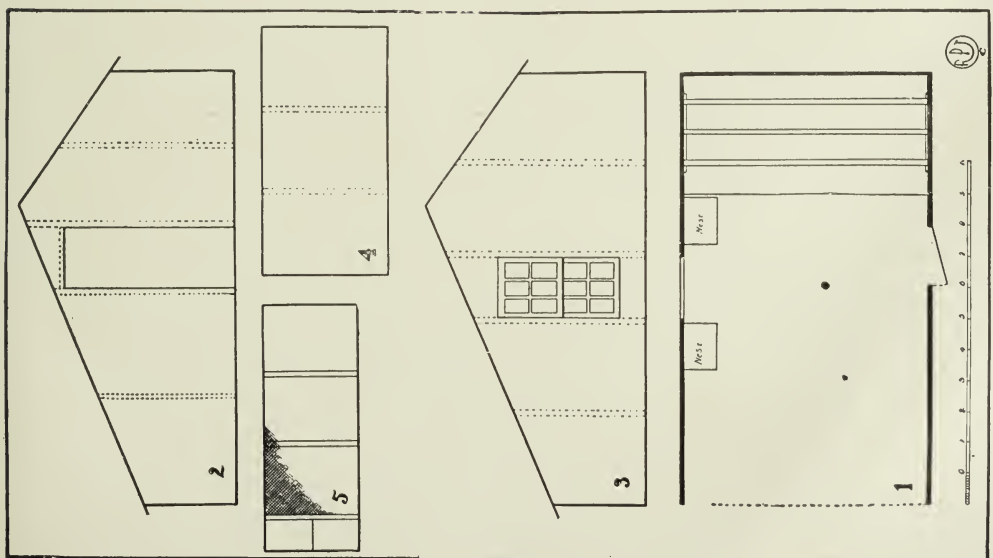
SYMPTOMS.—The fowl is always dull, dumpish and droopy. It has great thirst and walks slowly. The comb and wattles grow pale and lose freshness and the crop fills with gas, digestion ceases, diarrhea sets in and the passages are yellow and quite frequent. The breathing is quick and the eyes appear very dull and are partly closed and the fowl soon dies.

TREATMENT.—The first step should be to remove the healthy from the sick and thoroughly disinfect the coop. Veterinarians and chicken raisers are not yet quite sure that a remedy has been found for cholera. I believe in burning all refuse and roosting poles. Then saturate the floor with one part of carbolic acid and ninety-nine parts of water daily for a few days. Also apply this to all the interior of the coop or whitewash with chloride of lime. Also use coal-tar disinfectant freely about the premises and continue to do so until you are certain that no infection remains. Should any fowl show any of the symptoms of cholera remove it at once. By doing so you will finally get rid of this disease. Many times thoroughness as to cleaning will prevent the disease spreading, so do not be slack in dealing with this highly contagious ailment. I have obtained good results by giving carbolic acid in small doses. Put one dram into one quart of water and give each fowl a teaspoonful at a dose two or three times a day. Or, give hypo-sulphite of soda and gentian. Put one and one-half ounces of hypo-sulphite of soda and three ounces of tincture of gentian into one quart of water and give one teaspoonful at a dose two or three times a day. Another inexpensive remedy is made by dissolving two or three drams of sulphate of iron in a quart of water and giving a dessert spoonful to each full grown chicken two or three times a day. Keep your poultry strong by giving tonics such as gentian, cinchona and ginger in the feed twice a day.

PEOPLE'S HOME REMEDIES FOR CHICKEN CHOLERA.—

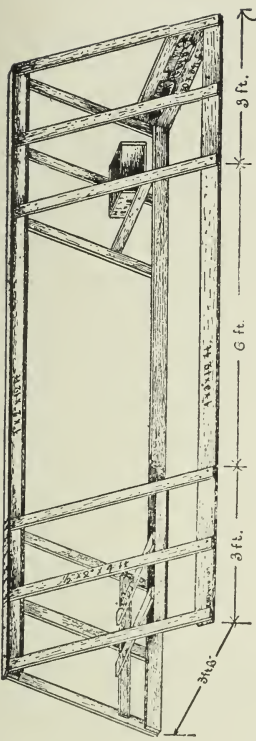
1. **Kerosene.**—Feed corn that has been soaked in kerosene for ten or twelve hours. Repeat several times.

2. **Cholera Mixture.**—Take one pound each of charcoal and sulphur,

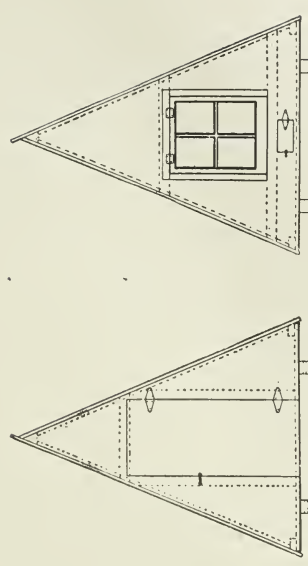
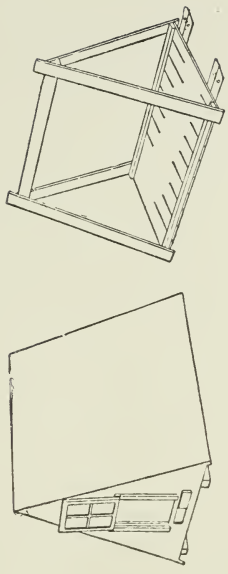


PLANS FOR OPEN FRONT POULTRY HOUSE.

1. Plan, location of roosts and nests.
2. East End—Showing location of door and studs.
3. West End—Showing location of window and studs.
4. North or Rear Side—Showing location of studs.
5. Front Side—Showing 1-inch mesh wire netting, small fowl entrance and location of studs.



PLANS FOR "A" COOP.



PLANS FOR PORTABLE COLONY HOUSE.

- Elevation.
- Front.
- Rear.
- Frame for sides, floor and sills or runners.

one-half pound of copperas, ten grains of calomel and one grain of salicylic acid. Mix, and grind to a fine powder. The dose is a tablespoonful for a dozen fowls. Give once a day in moist meal.

3. **Salt, Etc.**—Mix plenty of salt with the feed. Also keep plenty of fresh water before them and keep their surroundings clean.

4. **Douglass Mixture.**—Carefully mix an ounce of sulphuric acid with a gallon of water. In another gallon of water dissolve half a pound of copperas. Mix the two together and keep tightly corked. Put from two teaspoonfuls to two tablespoonfuls into each quart of drinking water. This is a good tonic and a preventive and cure for cholera.

5. **Castor Oil and Carbolic Acid.**—Into each gallon of drinking water put one-half teaspoonful of carbolic acid. Also give each chicken a teaspoonful of castor oil.

6. **Salts.**—As a preventive put a teaspoonful of salts into each gallon of drinking water.

7. **Alum and Saltpeter.**—Dissolve alum and saltpeter in the drinking water. Use equal parts of each. This is a preventive of chicken cholera.

8. **Carbolic Acid and Glycerine.**—To a quart of water add a dram of carbolic acid and an ounce of glycerine and of this mixture use two tablespoonfuls to a gallon of drinking water.

9. **Onions and Ginger.**—Put chopped onions and ginger in the feed once a day for a week or so.

BLACK HEAD—CONTAGIOUS BOWEL AND LIVER DISEASE.—

CAUSES.—This disease is caused by a micro-organism belonging to a family called the protozoa. These parasites are no doubt taken in with the food or water supply and upon reaching the two blind portions of the intestinal tract they halt and there multiply rapidly, setting up more or less inflammation and enlarging the bowels and liver. A thickening of the walls of the intestines takes place and the liver becomes covered with spots yellow in color.

SYMPTOMS.—During the early part of the sickness the fowl appears dull, hangs the head and some time later the bowels loosen and move too freely, then the bird begins to show unthriftiness. Young fowls are the most likely to suffer and the disease runs a slow course. Very often the comb loses its rich red color and turns dark, hence the name "black head." When opened after death, the liver is found to be too large and usually covered with grayish-yellow spots. The intestines are inflamed and their wall very thick.

TREATMENT.—Very little can be done for turkeys or chickens when they suffer from black head more than to give tonics. Feed them well and give hypo-sulphite of soda in the drinking water; or, give copperas or gentian in the feed. When this disease finds its way into a flock of turkeys, dispose of them as soon as possible for the disease is not going to be easily checked. It is always a difficult task to get rid of this disease and if you fail, dispose of the whole flock and give up raising turkeys for not less than two years. Then you can pretty safely start over again.

PEOPLE'S HOME REMEDIES FOR PARASITIC BOWEL DISEASE.—

1. **Citrate of Iron.**—Dissolve 40 grains of citrate of iron in each quart of drinking water.

PEOPLE'S HOME REMEDIES FOR LICE.—

1. **Sulphur as a Preventive.**—Two or three times a week put a handful of sulphur into the feed and the chickens will never be troubled with lice.

2. **Kerosene and Lard.**—Kerosene and lard make a mixture that will kill the lice every time.

3. **Dust and Ashes.**—Mix wood ashes with fine dry road dust and keep in the hen house all the time. Also add a little carbolic acid to some white-wash and whitewash the premises occasionally.

4. **Castor Oil.**—A little castor oil rubbed on the head and under the wings of setting hens will prove effective.

5. **Coal Oil.**—Spray the house, roosts and nests every two or three weeks with a mixture of equal parts of kerosene oil and water.

6. **Tobacco or Sulphur.**—A few leaves of tobacco or a little sulphur in the nests of setting hens will keep away the lice.

PEOPLE'S HOME REMEDIES FOR PULLING AND EATING FEATHERS.—

1. **Salt.**—Put a teaspoonful of salt into two quarts of moistened meal or shorts and give twice a week. If the fowls have plenty of salt they will not form the habit of pulling and eating their feathers.

2. **Salt Pork.**—Chop some salt pork with the feed and give twice a week if you would prevent this habit.

PEOPLE'S HOME TONIC FOR POULTRY.—

1. **Black Pepper.**—To two and one-half pounds of corn meal add one ounce of black pepper. This is a stimulant and tonic for all kinds of poultry.

PEOPLE'S HOME REMEDIES FOR EGG-EATING HENS.—

1. **Mustard.**—Let out the contents of an egg through a small opening in the large end. Beat some strong mustard into the egg and refill the shell, pasting a piece of cloth over the opening. Place where the hens can get at it and after attempting to eat it they are very likely to think twice before trying to eat another egg.

WHITE DIARRHEA.—White diarrhea in poultry is caused by a germ of low vitality which harbors in the cæcum, or blind intestinal pouch, and sets up irritation and excessive bowel action causing great weakness and very often death. Chicks between two and six weeks old and even younger seem to be the ones generally affected.

SYMPTOMS.—There is dullness, weakness, and loss of appetite accompanied by a white, pasty fecal discharge.

TREATMENT.—Treatment in such cases is by no means satisfactory for this ailment is not well understood; however, fairly good results follow giving small doses of castor oil, sweet oil or turpentine; or, dissolve five or ten grains of citrate of iron in each gallon of their drinking water.

Prevention.—More can be accomplished in the line of prevention than by medication after the chick takes sick. Eggs used for hatching should be cleansed by washing them in a ninety-five per cent. solution of alcohol and if an incubator is used it should first be thoroughly disinfected. Formaldehyde is the best disinfectant to use; also expose the incubator to sunlight and fresh air or put in a heated oven. The egg trays should be thoroughly sterilized as often as convenient. The brooders should also come in for their share of disinfection and sterilization; they should be kept scrupulously clean. It is also important to treat the ground that the chicks run on—this should be kept clean; it should be cultivated and lime mixed through the soil; furthermore, the land should be exposed to the sunlight. If hens are



DR. FAIR CAPONIZING A ROOSTER.

Capons bring fancy prices and much money is made by poultry raisers who understand caponizing.

(Photographed especially for this book.)

to hatch out the eggs their nests should be clean or composed of fresh straw or absorbent cotton with a little oakum or tar paper in the bottom.

CAPONIZING.

It is needless for me to say that caponizing cockerels, if done properly, will prove profitable to poultry raisers. The operation is by no means a difficult one to perform and it requires but a few lessons to teach any poultry raiser how to operate, but before attempting to do so secure a set of instruments suitable for doing the work and it will pay you well.

Directions.—Select the cockerels you expect to operate on, place them in a dry clean place that has been disinfected, give them neither food nor water for thirty hours or feed them lightly for a day or two to have the bowels as empty as possible. Place the fowl on his left side, tie his legs with a tape or string, also tie the wings together and fasten to a 2-lb. weight or to table and the legs may also be tied to table; this keeps the fowl in position during the operation. Clip off feathers just in front of the thigh joint; apply one part bichloride of mercury and one thousand parts water to the skin or use peroxide of hydrogen or carbolic acid, one part to fifty of water. Make an incision not more than two inches nor less than one and one-half inches long between the last two ribs. Avoid cutting the intestines (if they are full you may do it occasionally). If the wound bleeds, halt a moment until it ceases. Use the spreader to keep the wound open; pick up glistening lining with a hook; cut or tear it open to get into the bird; then you will plainly see one testicle lying close up to back and covered with a sort of film which can either be cut open or taken away with the testicle. Now slip the wire between the artery and testicle, making a loop; and then cut off testicle. Then repeat the operation in removing the other testicle through the same opening. Understand, the loop is brought through a canula and the end of canula should be kept down close to the testicle when it is cut off. Caution.—Be sure to drop no dirt or pieces of feathers into the abdomen when operating; have clean instruments and hands when you operate and remember that most deaths occur from hemorrhage. This is on account of cutting off an artery which lies just back of the testicle. I find that many poultry raisers do not use proper cleanliness when operating. I have never failed to teach farmers quickly how to caponize but it should be done only by showing them how and standing over them during their first operations.

VALUABLE POULTRY SECRETS.

SPROUTED OATS.

A Great Egg Producer.

How to Make a Bushel of Green Winter Feed for Ten Cents.—Cover a pailful of ordinary oats with water and if it is summer time let them soak for five or six hours but if winter time they should soak for twenty-four hours. Then turn them into a pail twice the size of the first one and that has previously had a half-inch hole bored in the bottom so as to allow drainage. Set them in a moderately warm place for three or four days or until they are well

sprouted and begin to heat. They should be sprinkled with water once a day and should always be kept covered with a blanket or old sack. It is best to grow them in a cellar. In the summer time use cold water and in the winter warm water. When they have become a mass of sprouts they should be spread three or four inches thick in a box that has also had one or two half-inch holes bored in it. When in this box they should also be sprinkled and stirred each day. They make the best feed when the sprouts are from half an inch to an inch long. One bushel of good oats properly treated will make four or five bushels of sprouted or processed oats. In this way you not only get the full value of the nutriment in the oats but you also have a green food for winter use that will start the hens to laying quickly. Twice a day give the laying hens all they will eat. A teaspoonful each of salt and cayenne pepper added to each pailful of oats will give excellent results. When the sprouts are half an inch long they make a fine chick food and may be given to chicks three times a day after they are a week old. This makes a good food for turkeys, ducks and geese as well as chickens.

HOW TO MAKE MONEY ON CHICKENS.

Rules and Suggestions Gathered from the Most Successful Poultry Raisers in the World.

1. Use open-front hen houses or houses open on the south side and only protected by muslin curtains. Curtains to be dropped in zero weather only.

2. Keep houses perfectly clean. Dropping boards to be cleaned at least once a week and floors as often as the litter becomes soiled or damp.

3. At least twice a year whitewash the buildings thoroughly, using carbolic acid in the whitewash to keep away vermin. If this is done you will not be troubled with mites.

4. To get eggs in winter you must make the hens exercise. Do this by keeping the floor well covered with from six to twelve inches of clean, dry straw in which scatter the morning and evening feed, thus making them work for what they get to eat.

5. Feed all the hens will eat, twice a day. Feed a balanced ration, giving wheat, oats and barley in equal portions and in the summer add an equal portion of corn but in the winter add three times as much corn. The proportions may be varied to suit the inclination of the fowls.

6. You cannot expect many eggs in the winter unless you give plenty of green food. Sliced beets are good, also keep the feeding rack full of short cut clover. The hens are fond of clover and you can depend on its producing eggs. Sprinkle the clover with water and let it stand a day before feeding.

7. A good and inexpensive green food is made by sprouting oats. You thus get a good green food for winter use at a cost of about ten cents per bushel. Directions for making these sprouted or processed oats are given elsewhere.

8. Keep beef scrap, oyster shell, and grit constantly before the hens. Keep these in hoppers to avoid waste.

9. Keep fresh, clean, drinking water before the fowls all the time. Clean the water dishes every day.

10. Avoid disease by the free use of disinfectants, such as carbolic acid and formaldehyde.

11. Keep a box of clean, dry dust in a sunny corner of the poultry house. This is important.

12. Do not over-crowd the hens and do not keep too many in one building.

13. Hens do best in flocks of not more than fifty.

14. Allow one cock for every twelve or fifteen hens in the breeding pens. No cocks in the laying pens.

15. Allow plenty of fresh air at all times but do not have drafts.

16. Keep the hens free from lice.

17. In the summer the chickens should have free range. If this is impossible they should be supplied with plenty of green food.

18. For breeding purposes use only your best and healthiest stock.

19. If you want to breed for the best egg production, get trap nests and keep a record of each hen and breed only from the hens that show the greatest yearly production of eggs.

20. In the poultry business it is attention to details that counts. Observe regularity in feeding, cleaning, and filling the hoppers and look after the comfort of the hens at all times.

21. One breed well cared for will pay better than too many breeds.

22. If you feed a mash do so in the morning but do not feed enough to keep them from exercising. Many poultry raisers give dry feed exclusively.

HOUSEHOLD PETS.

DOGS.

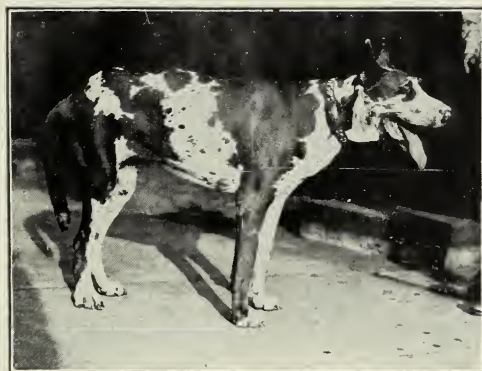
FEEDING DOGS.—In feeding dogs there seem to be many wrong opinions and numerous ancient traditions are being followed that are far from right. I even know people who believe it dangerous to give a pup several months old a piece of meat, holding fast to the belief that the dog should have no meat until he has lived twelve months or more. Meat is not harmful to pups after they are three or four months old, but of course the meat should be well cooked and fed in small quantities and mixed with other things in order to balance the ration. After the pup is weaned table scraps or puppy biscuits with plenty of milk seem to grow them evenly. Pups should be fed twice daily; aged dogs once. Meat, vegetables, cereals and milk is a proper ration. Well cooked meat mixed with rice or corn meal mush makes a good dog food. The food-holding utensils should be scalded with hot water once a day. Feed the house dog his hearty meal in the early part of the day.

CANINE DISTEMPER.—This disease has existed for nearly a thousand years and has always been considered a dangerous ailment in young pups, but not nearly so fatal to dogs more than a year old. The contagion is contained in the discharge from the nose and eyes and in the blood. Distemper is a contagious infective disease. The true nature of this ailment has not yet been positively demonstrated; however, the contagion is no doubt both fixed and volatile. It is transmitted by co-habitation, by inoculation and perhaps taken from the air in breathing. Old dogs seldom suffer from canine distemper. Weak, delicate dogs or those kept in-doors are easily infected.

SYMPTOMS.—The symptoms of distemper vary greatly. The mucous membrane of the nostrils, eyes, air passages and digestive organs are inflamed. The brain and spinal cord may be affected. The dog shivers and has fever; the coat is dry, the eyes discharge and ulcers sometimes appear on the eyeball. The dog coughs, loses his appetite, is thirsty, vomits and the bowels are either costive or too loose. It is not unusual for pneumonia to follow distemper.

TREATMENT.—It is quite difficult to lay down any particular line of treatment for there are so many different forms of distemper; therefore, I will say quinine is a useful remedy and small doses of beech wood creosote is another good remedy. If feverish, give acetanilide. Cod liver oil, raw eggs, alcoholic stimulants and nutritious, easily-digested food help all cases of distemper. When complications arise they must be met with a proper remedy. When sick, keep the dog warm, dry and comfortable.

MANGE.—There are two kinds of mange in the dog—the follicular and sarcoptic. Follicular mange is not easily cured as the parasites are down in the hair follicles but this variety is not nearly so contagious on this



JOHN D. ROCKEFELLER'S GREAT DANE WATCH DOG.

Dr. Fair removed a cancerous tumor from this valuable dog.

(Photographed especially for this book.)



DR. FAIR'S IMPORTED SCOTCH COLLIE.

Kept at "Mentor Stock Farm." Many interesting stories are told showing the great intelligence of the collie.

(Photographed especially for this book.)

account. Sarcoptic mange is the most common variety and is very contagious. Man can contract this disease but is in less danger than other animals and thin skinned dogs seem to be the most easily diseased.

SYMPTOMS.—The symptoms of follicular mange are redness of the skin and shedding of the hair, but at first there is no irritation of the skin that can be seen. Some time later, and not always very soon, little pustules appear which, if squeezed, exude a purulent sort of fluid. If this fluid is placed under a microscope a great many flat, fish-like parasites with short legs on either side can be seen. In the later stages the dog is uneasy and scratches and rubs constantly, the body becoming covered with sores and the animal losing flesh and giving off a very offensive odor. In sarcoptic mange the disease usually commences under the arm or where the skin is thin, causing great itching and scratching which are followed by sores that are slow to heal. If the dog is neglected and the disease not checked, the sores soon cover the whole body and most of the hair falls out. In many cases the disease spreads rapidly over the whole body, causing great irritation which is followed with emaciation and if nothing is done to kill the parasites the dog soon dies from weakness. It is well to keep in mind that both kinds of mange may be communicated to man, especially sarcoptic mange.

TREATMENT.—First of all the dog should be clipped and thoroughly washed with soap and water and dried; then apply equal parts storax and raw linseed oil; or one-half part carbonate potash, one part sulphur and five parts lard; or one part coal-tar disinfectant and four parts vaseline; use any of these remedies daily for a few days. If the whole body is diseased put medicine on only a part each day, for fear of its injuring the dog. Remember that carbolic acid and many other irritating drugs should never be put on dogs.

RINGWORM.—This is a very common ailment in dogs and is caused by a parasite that belongs to the vegetable kingdom and the disease is called ringworm on account of the parasites grouping and working in patches of a somewhat round shape. Ringworm is readily communicated from one animal to another and it is also communicated from animals to man; however, these parasites do not care to reside on man nearly so well as animals, and I have known cases where they seem to die off in a month or two without much being done to kill them.

SYMPTOMS.—An eruption is noticed on one or more parts of the body and is more likely to be about the head, neck and loins than any other part of the body. The hair soon drops out in circular sort of patches and by using a magnifying glass the surface of the skin will be found rough and a fluid oozing out. In many cases the disease is confined to a small area and never spreads much while in others it extends pretty much over the body.

TREATMENT.—First wash the parts with soap and water and apply either iodide ointment or tincture of iodine a few times; then apply one part sulphur and six parts lard, or any good home mange remedy.

LICE.—Lice are the result of keeping animals in a filthy condition and not feeding them properly. Their presence is easily observed by inspection which is aided materially by the use of a magnifying glass.

TREATMENT.—A rough-coated dog should be clipped, for by doing so much less medicine will be required to kill the lice. One of the most satisfactory lice killing remedies is made by mixing five ounces of crushed staves-

acre seeds in a gallon of boiling water and allowing it to simmer an hour or two and then straining through a cheese cloth and filling to original quantity. Apply three times a week. Or, apply one part coal-tar disinfectant and thirty parts water; or, apply one part powdered stavesacre seeds and five or six parts lard; or, a small quantity of mercurial ointment placed on the body where he cannot lick it off acts well.

FLEAS.—During the dry summer months nearly every dog is troubled more or less with fleas and if kept on sandy soil or bedded with sawdust or straw they are very likely to have them. Fleas irritate and annoy dogs very much and there is little use of driving them off the dog or killing them unless they are driven out of the kennel.

TREATMENT.—To kill fleas soak one-fourth pound crushed stavesacre seeds in a gallon of hot water for three or four hours, strain and apply once a day. Or, apply insect powder. Apply cologne or a weak solution of coal-tar disinfectant; also, dust on some flowers of sulphur along the back. The kennel should be disinfected and kept clean.

WORMS.—Nearly all dogs have a few worms and tapeworm is a common ailment, but they may not have enough to do any particular harm. Worms do not always remain in the bowels but find their way into the stomach.

SYMPTOMS.—There is a change in disposition, an excessive appetite, loss of flesh, itchy skin, rough staring coat or loss of hair, bowel pain, indigestion, occasional vomiting or scouring, fetid breath and a disposition to lick the anus and drag the hind parts along the ground. Wormy dogs usually show an irritable temper and frequently suffer from vertigo or convulsions.

TREATMENT.—For round worms in dogs, areca nut and spigelia are reliable remedies; or, giving fluid extract of spigelia and fluid extract of senna every morning for three or four days will usually rid a dog of round worms. The dose of powdered areca nut is about two grains for each pound of the dog's weight and it is convenient to give it in some milk. The dose of fluid extract of senna for a matured dog is from twenty drops to two drams, according to weight, and for young pups one drop for each week of age. This medicine should be combined with a brisk cathartic, such as senna or castor oil. Santonine is another useful remedy; for pups give from one-fifth to three grains, combined with a small dose of calomel. For matured dogs I usually give from six to twenty-five grains at a dose. Powdered kamala is another useful remedy or the powdered male fern or the oleoresin of male fern will be effective.

PNEUMONIA—LUNG FEVER—INFLAMMATION OF THE LUNGS.—This disease is generally the result of neglected cold, catarrh or chilling when in a heated state; or, it is due to exposure or housing in damp, badly ventilated basements or kennels.

TREATMENT.—Give the dog good care; keep him in a well ventilated place and reduce the fever by giving small doses of aconite, acetanilide or nitrate of potash. Apply antiphlogistine or mustard to sides; also give quinine and other tonics and stimulants. The treatment should be much the same as in man or the horse.

OPHTHALMIA—INFLAMMATION OF THE EYES.—This disease is the result of a great many exciting causes and the result of other diseases. Dust and other irritants blowing into the eyes is the most common cause.

TREATMENT.—Avoid keeping the dog in a place where the light is too bright. Apply equal parts of extract of witch hazel and water or dissolve boric acid in water—all the water will take up—or dissolve three grains of sulphate of zinc and one grain of atropine in one ounce of water. Eye lotions should be applied three or four times daily.

WARTS.—Warts should either be cut off or burned with caustic such as lunar caustic, chromic acid or acetic acid.

TUMORS.—Small tumors often appear in the corner of the eye or on different parts of the body and when they do they should be cut out and boric acid applied or any non-poisonous home-made healing lotion will do.

WOUNDS.—Wounds on dogs should be stitched the same as in other animals, but the healing remedies applied should be non-poisonous, such as peroxide-hydrogen, boric acid or coal-tar disinfectant.

CANKER OF THE EAR.—Canker is a diseased condition of the inner surface of the ear.

SYMPTOMS.—The dog shakes his head and paws the ear. If but one ear is affected the head is carried to one side. The inner surface of ear looks red, is swollen, inflamed and gives off an offensive odor.

TREATMENT.—Discontinue feeding meat and stimulating food. Apply one part peroxide of hydrogen and four parts of water and ten minutes later dust on boric acid; or, apply one part calomel, three parts oxide of zinc and twelve parts boric acid to the sore parts once a day.

COLIC.—Colic is usually the result of exhaustion, exposure to cold and wet, eating a hearty meal after fasting or eating infected and unwholesome food.

TREATMENT.—Give one-half teaspoonful of ginger and a teaspoonful of whiskey or from five to twenty-five drops of laudanum or some peppermint or any home colic remedy.

INFLAMMATION OF THE BOWELS.—This comes on from exposure of the body to too much cold when in a heated condition or from eating certain poisons or swallowing sponges, rags or foreign bodies that obstruct the bowels.

TREATMENT.—Always try moving the bowels with sweet oil or castor oil or perhaps linseed oil; also apply hot packs, poultices or weak mustard water. Give laudanum to relieve the pain, also give injections of soap and water to move the bowels.

COUGH.—Dogs are subject to coughs which are the result of exposure to wet and cold or of sleeping in damp, badly ventilated basements or cellars.

TREATMENT.—Give from three to ten grains of iodide of potassium and from three to ten drops of laudanum at a dose three times a day, or give any good home cough remedy.

PARTURITION—PUPPING.—This generally occurs between the sixty-first and sixty-sixth days after service and if the bitch is not too fleshy, has been exercised regularly while pregnant, and the bowels are not too costive, she will whelp without assistance. When a bitch is unable to whelp and requires help, I generally give an anæsthetic, using ether as it is not dangerous. I seldom give chloroform in such cases. Instruments should be used with care. Many times the fingers can be used and of course this is safer than using instruments. Be sure to remove the afterbirth and wash out the uterus with a weak antiseptic or astringent for a few days.

HERNIA—RUPTURE.—We meet with umbilical, abdominal and in-

guinal hernia most often in dogs and cats. The most common causes are accidents and injuries. Nearly all cases require surgical treatment. The work should be done by a person who has had experience and uses cleanliness. The operation is not dangerous.

CASTRATION.—Dogs are castrated to prevent them from wandering away from home. Wash the scrotum with an antiseptic of some kind; give them ether and then make a bold incision, exposing the testicle; then twist the cord a few times, scraping cord through, or apply traction to the cord until it gives way. This last method I do not like so well. In old dogs I very often use an emasculator, clamp and iron, or apply an aseptic ligature. Be sure to use clean instruments and have clean hands.

SPAYING.—This is an operation that is done to prevent bitches from coming in heat and to prevent breeding. Ether is given, the belly shaved and the abdomen opened in the flank or center of the belly. The ovaries are found and twisted off and the wound stitched. The stitches should be removed on the fourth day and in a few days she will be well. The operation is performed with less risk if she is not in heat; however, it can be done when in heat and the bitch live. Apply peroxide of hydrogen to wound, also use boric acid.

FRACTURES OR BROKEN BONES.—Dogs are very liable to meet with fractures of the toes, legs, hip and back. These should be treated the same as fracture in other animals. Give the dog ether as an anæsthetic, crowd the bones into position and apply a plaster bandage, starch bandage, or adhesive plaster bandage; or, an ordinary bandage will often answer the purpose. A fracture requires four or five weeks to unite properly.

CHOREA.—This is a nervous ailment which frequently follows canine distemper, other debilitating fever or injury. The symptoms consist in a twitching and quick jerking condition of certain muscles of different parts of the body. When the disease becomes chronic it is painless.

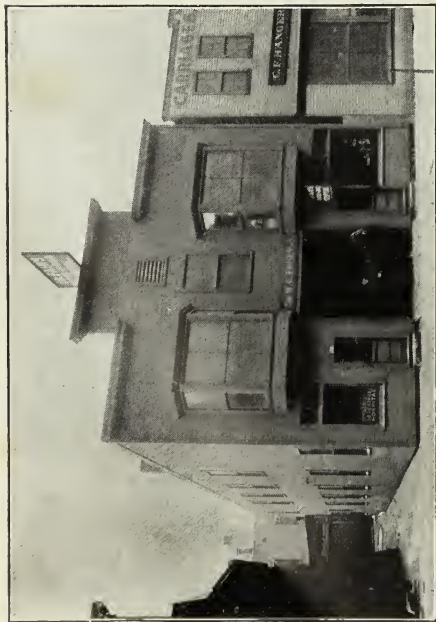
TREATMENT.—Keep the dog warm and give him good care. This is about all that can be done. Mild cases sometimes recover; severe ones never do.

WORMS IN THE KIDNEYS.—Small thread-like worms measuring from twelve to thirty-six inches grow and develop in the kidney. They attain considerable size, destroy the function of the kidney and later make their way into the abdominal cavity. The only treatment that gives any results is ten or fifteen drops of turpentine at a dose, daily; however, I am inclined to believe there is no positive remedy.

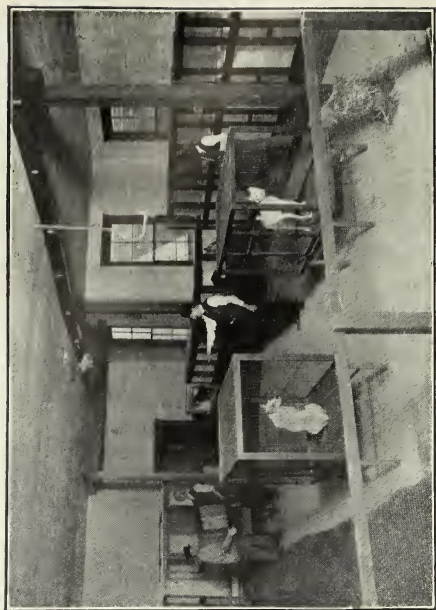
GONORRHEA.—Dogs are seldom troubled with infectious gonorrhea, but sometimes have gleet, attended with a mucous discharge.

TREATMENT.—Bathe the parts with warm water twice a day. Dissolve one dram of sugar of lead in a pint of water and apply twice a day, or dissolve one-fourth dram of permanganate of potash in a pint or two of water and apply this. There are many other remedies that are used in human practice that are equally as good for an ailment of this kind. Give five drops oil of sandal wood at a dose twice daily.

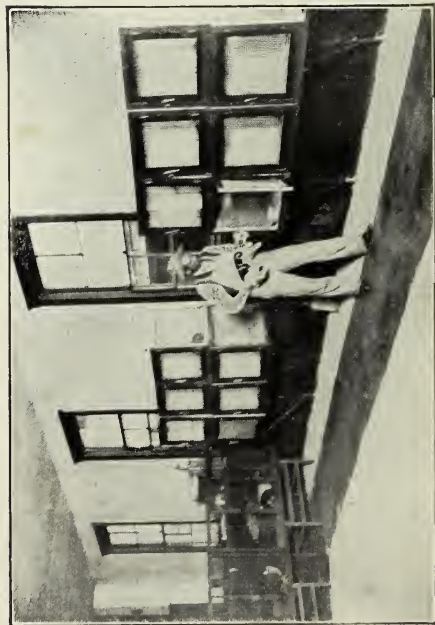
RABIES—HYDROPHOBIA.—Rabies is an infectious disease and can be produced only by inoculation with the specific virus which causes it; however, an opposite opinion is held by some people, believing that the disease can arise spontaneously. Its being difficult to trace the origin of infection



Where the Pets are Treated and Cared For.



A Corner in the Dog Hospital.



A Corner in the Cat Hospital.



Feeding Time for the Pets.
THE PET STOCK DEPARTMENT AT DR. FAIR'S VETERINARY HOSPITAL.
(Photographed especially for this book.)

is what leads people to hold the latter opinion. Rabies has existed for more than two thousand years. It is an incurable ailment, but both man and animals can be immunized. The virus of rabies is contained in the saliva, blood and body.

SYMPTOMS.—The animal becomes restless, dull and watchful and withdraws from his companions, hiding in dark corners, below chairs and other furniture. He becomes nervous, lying down and jumping up again in an excited, unnatural manner. He has a tendency to rove about and if possible will escape and wander away. At first the dog's power of recognizing people is not lost; he is inclined to lick things that are cold and will pick at bits of wood and coal and swallow stones and as the disease advances his movements become somewhat unsteady. Sometimes he will stare at an imaginary object, then rush forward and bite anything that may be in his way, or even at the air as if he were catching flies. The appetite is lost. The thirst is considerable but he is unable to swallow. His bark changes to a howl, he occasionally vomits, the jaws drop, saliva runs from the mouth and the tongue swells and grows black. The bite of a mad dog is less liable to infect man than other animals.

CATS.

GENERAL SYMPTOMS OF DISEASE IN CATS.—Whenever a cat becomes sick or ailing from disease or injury, it usually loses its appetite and hides out of sight and the nose becomes hot and the coat dry. The cat often moves about as if in pain and if not, sleeps almost continually. When they have stomach trouble they are inclined to eat grass; this produces an irritation of the stomach, resulting in either vomiting or purging or both. Grass acts much the same as Glauber's salts or castor oil given in small doses to children. Mixing some flowers of sulphur or baking soda in their drinking water seems to help sick cats. Cats are often troubled with colds, coughs, sore throat and bronchial and lung diseases. They have liver, stomach and intestinal diseases; fever, infectious distemper; also glanders, eczema and local diseases of the eyes, teeth and claws; also parasitic diseases such as mange, fleas and worms.

CATARRH—COLD IN THE HEAD.—This consists in an inflammation of the mucous membrane lining the nose, throat and head. The symptoms are sneezing and coughing with fever in most cases. The treatment consists in good care and giving home remedies such as are used in human practice and for dogs.

BRONCHITIS.—Bronchitis is an inflammation of the tubes that lead to the lungs and the treatment consists in keeping the cat out of drafts, dust, cold rain storms and out of wet basements and medicating with the remedies used for children and dogs. Most cases need no drugs. When the cat is sick it hides away in a sheltered place and soon recovers.

PNEUMONIA.—Pneumonia is attended with more fever than bronchitis; however, in cats the two ailments generally occur together as we seldom have lung fever alone in cats. In many cases parasites are lodged in the lung tissue.

TREATMENT.—Give the cat good care and pure air to breathe. Keep it eating by tempting it with different kinds of food. Apply poultices, give

whiskey and small doses of quinine, also home medical remedies that are prescribed for broncho-pneumonia in horses and for man.

GASTRITIS.—Gastritis is an inflammation of the stomach, generally brought on by feeding too often and too much at a time, or by feeding irritating food or giving drugs that burn the inner wall of the stomach; but it may be a secondary or constitutional disease and not the result of gorging the stomach. The symptoms are: vomiting up food, frothy mucus and sometimes blood.

TREATMENT.—When the cat is left to follow his own instinct he eats grass which acts as an emetic or cathartic and if it does not act thus, give him a cathartic of Glauber's salts and if the vomiting continues give hot black coffee, and if he has much pain give small doses of chloretone or paregoric.

CONSTIPATION.—This is an ailment the cat is pretty free from but when it does occur give castor oil, sweet oil or jalap.

DIARRHEA.—This is a very common ailment in house cats, brought on by eating out of dirty dishes and eating infected food. Feeding irregularly and too much fat meat also bring on looseness of the bowels. Liver and vegetables when fed to cats open their bowels.

TREATMENT.—All the remedies that are prescribed for bowel ailments in man are suitable for cats. A small dose of sweet oil or castor oil should first be given to clear the bowels and if the pain is great give laudanum.

YELLOW-SJAUNDICE.—When the mucous membrane of the eye is yellow the liver is perhaps congested or the bile is not passing out of the body by its natural channel. The liver may contain parasites or may be inactive or enlarged. When the bowels are costive give small doses of calomel and castor oil or Glauber's salts and regulate the cat's diet.

TUBERCULOSIS.—Cats very seldom suffer from tuberculosis and, in fact, it is a very difficult task to inoculate the cat so as to produce the disease. I very often examine cats after death to satisfy people who insist that their cat had consumption but generally find they were mistaken.

DISTEMPER.—Distemper is a contagious and infectious disease affecting cats. Associated with this ailment various organs of the body may be inflamed and the cat always has fever. The symptoms are: a watery discharge from the nose and eyes, gradually growing thicker; fever; some coughing and quick breathing. The throat, bowels and lungs may become affected.

TREATMENT.—Keep the sick animal away from healthy cats. Be sure the cat has fresh air but is kept warm and in no draft. If the bowels are constipated, give a laxative but never give a cathartic for it may produce death. Give some baking soda in milk or some hot black coffee and if the cat grows cold give whiskey in twenty-five-drop doses every three hours. When lung or bowel complications set in treat them as in man.

GLANDERS.—This is a constitutional disease accompanied by the formation of tubercles on the body and in the nose on the mucous membrane. These tubercles break and form ulcers. The lungs and liver are sometimes affected as well as other vital organs of the body. Lions take glanders from eating horse meat cut from the carcass of glandered horses. This is not by any means a common ailment in cats unless fed meat from glandered horses.

ECZEMA.—This is a skin disease, due perhaps to errors in feeding and care of the skin. It consists of a hyperemia of the skin followed by an oozing

through of a fluid which seems to dry, forming scales and leaving the skin rough. The face, back and legs are most commonly affected.

TREATMENT.—Give three grains baking soda in food three times a day and dissolve one ounce of baking soda in one quart of water and apply to the sore parts three times a day, or use a home eczema cure prescribed for man. Change the feed; give less meat, no sweet cakes or candy, no butter or greasy gravy and keep the cat in a cool place.

CANKER OF THE EAR.—This is one form of eczema and the same line of diet prescribed for eczema should be followed; also apply one part peroxide of hydrogen and four parts water, then apply boric acid a few minutes later. Do this twice daily. Give two-drop doses of Fowler's solution twice a day. Also give one-grain doses of iodide of potassium daily.

MILK FEVER.—Taking away all the kittens immediately after birth very often causes the udder to cake and inflame, which of course, is followed with fever; besides, wounds on the belly may also cause the udder to inflame.

TREATMENT.—Apply one part extract of phytolacca and eight parts vaseline to udder twice a day and give two drops of fluid extract of phytolacca root at a dose three times a day, or give two grains of nitrate of potash three times a day.

FITS—CONVULSIONS.—Fits and convulsions are generally due to some kind of digestive disturbance or irritation, the ingestion of irritating food, overloading the stomach in hot weather and to stomach worms. It is more common in young than old cats.

TREATMENT.—Give a cathartic of either syrup of buckthorn or castor oil and wrap the cat in a hot blanket or drop it in warm water, all but the head. Give two grains of bromide of potash four times a day.

EPILEPSY.—Epilepsy develops suddenly. The cat falls down and froths at the mouth. The greatest difference between this ailment and convulsions is the absence of delirium. Do not frighten the cat. Give laudanum or chloral hydrate to quite the animal, also give syrup of buckthorn to move the bowels. Feed a good quality of easily digested food and not too much of it, also exercise the animal.

FLEAS.—Fleas do not as a rule bother cats and if the same flea gets on a person it does not remain. They are easily gotten rid of by applying cologne, tobacco snuff, flowers of sulphur or Persian insect powder. Apply not only on the cat, but also in its basket or sleeping places.

SARCOPTIC MANGE.—The most common kind of mange affecting cats is sarcoptic mange and it is due to a small parasite which burrows under the skin and multiplies rapidly, causing intense itching.

TREATMENT.—One of the most effectual and least expensive remedies is made by mixing one-half a part of carbonate of potash, one part sulphur and six parts fresh lard. Apply it daily for a few days and then as often as necessary. There are many other remedies that will cure mange but select the least irritating.

FOLLICULAR MANGE.—Follicular mange is a kind that is not easily cured. It affects the nose, skin of the chin, and claws. This insect is hard to kill but if the cat will allow air-tight, non-irritating balsams to remain on long enough to smother the insects, a cure will be effected. Light applications of mercurial ointment or sulphur ointment applied freely will help effect a cure.

STOMACH WORMS.—Stomach worms are not only found in the stomach but also in the intestines and are three or four inches in length and the size of a slate pencil, the female being the longest.

TREATMENT.—Purge the cat with castor oil, then give three grains of santonine; one hour later give three drops of turpentine in a small dose of castor oil.

TAPEWORM.—The tapeworm is from four to thirty inches long and lives in the small bowel with its head fastened to the mucous membrane of the bowel while the rest of the body floats in the intestines.

TREATMENT.—Starve the cat for thirty hours, then mix twenty grains of powdered areca nut or fifteen grains of powdered kamala, or three grains of santonine in milk, which a hungry cat will drink. Two hours later give a large dose of castor oil and you may be able to dislodge the worm. Be sure the head comes away and it should then be killed.

RINGWORM.—This disease appears in the form of round bald patches which soon get sore. It is caused by a vegetable parasite.

TREATMENT.—Apply some mercurial ointment or paint the patches with tincture of iodine as soon as noticed and be sure to keep the cat away from children for people are very often diseased by coming in contact with cats that have ringworm.

TRICHINA.—Although it is difficult to make a correct diagnosis when cats suffer from trichina, yet many of them have it. I have known many cats to die from it that were treated for rheumatism.

EYE DISEASES.—In distemper and fevers cats have more or less eye trouble and in the treatment of these ailments good results follow bathing the eyes with hot water. Keep the cat in a dark room and feed cooling, laxative food. Apply one part extract witch hazel and three parts water; or dissolve boric acid in water, all the water will take up; or apply calomel to clear the eye and give small doses of calomel or iodide of potassium.

THE TEETH.—Frequently the young kitten has 26 teeth which are replaced by 30 permanent teeth when the cat is about six months old. The growing cat has trouble teething and may not do well. Old cats may have diseased teeth that should be extracted and the tartar should be broken off the teeth when it affects the gums. When the mouth is sore use mouth washes that are used for people.

THE CLAWS.—The claws often require cutting and, if trimmed, the house cat will prove much less destructive than with sharp nails. Nails often break and when they do they should be trimmed smooth.

POISONING.—It is not uncommon for the house cat or even the farm cat to get hold of rat poison which is generally composed of arsenic; or, some malicious person may give your cat strychnine. If poisoned with arsenic, give mustard and water or Glauber's salts to cause vomiting and if strychnine caused the poisoning give twenty grains of chloral hydrate and repeat the dose if necessary to control the spasms.

GIVING A CAT MEDICINES.—If possible give it in food; or, wrap him in a shawl and pour it down but avoid giving it in large quantities.

CASTRATING CATS.—Wrap the cat in a rubber cloth or shawl and leave the hind quarters out; clean the scrotum first; then open and remove the testicle by cutting off the cord or twisting it off, which stops bleeding. No after care is required except to keep the cat clean and warm.

SPAYING.—This is done to prevent females from breeding. I operate on one hundred or more every year by first giving the cat a small dose of morphine, hypodermically, then giving ether. Shave the abdomen and wash it, cut into the abdomen, remove ovaries, stitch wound, then keep cat quiet. Remove the stitches on the fourth day and the wound is generally healed in a week or less. Never give a cat chloroform unless you want to kill it. It is not alway necessary to give morphine before giving ether but I very often do give it to old cats and dogs.

USEFUL STABLE DRUGS.

Their Uses and Doses.

Acetanilide.—Used in febrile diseases. Doses: Horses, 1 to 3 drams; cattle 2 to 4 drams; sheep, $\frac{1}{2}$ dram. Repeat every few hours.

Acetic Acid.—Used to remove warts and other kinds of growths.

Aconite.—Used to reduce fever. Doses: Horses, 30 to 50 drops or more; cattle, 1 to 2 drams; sheep and pigs, 10 to 20 drops. Tincture of aconite is now made weaker than formerly.

Alcohol.—Alcohol is perhaps the most useful of all drugs in the treatment of live stock. It acts as a cerebral excitant, is a stimulant and increases functional activity of all organs. Doses: From one to three ounces and it acts best when given with ether, digitalis or aromatic spirits of ammonia.

Aloes.—Aloes is the common cathartic for horses and mules. Barbadoes aloes is the most reliable. The dose for horses is from 3 drams to 10 drams, given in combination with calomel and ginger in ball form or dissolved in water and given as a drench.

Alum.—Alum is quite a useful drug in veterinary practice, being useful in healing lotions and drying powders. Doses: Horses, 1 to 2 drams; cattle, 2 to 4 drams; sheep and pigs, 10 to 35 grains. Dried alum, commonly known as burnt alum, is deprived of its water and acts more like a caustic. When applied to wounds it acts as a powerful drying drug.

Areca Nut.—Areca nut is a vermicide, especially for dogs. Doses: 3 to 10 grains for small dogs and from 20 grains to 2 drams or even more for large ones; or, give 1 to 2 grains for each pound the dog weighs.

Ammonia (Aqua Ammonia).—Doses: Horses, 1 to 2 drams; cattle, 2 to 4 drams; sheep and pigs, $\frac{1}{2}$ to 1 dram. Aromatic spirits of ammonia—Doses: Horses, 1 to $1\frac{1}{2}$ ounces; cattle, 1 to $2\frac{1}{2}$ ounces; sheep and pigs, 1 to 2 drams; dogs, 5 to 40 drops. Carbonate of Ammonia—Doses: Horses, 1 to 2 drams; cattle, 1 to 4 drams; sheep and hogs, 10 to 35 grains; dogs, 1 to 6 grains.

Arnica.—Arnica tincture is most used. Doses: Horses, 1 to 4 drams; cattle, $\frac{1}{2}$ ounce to 2 ounces; dogs, 5 to 20 drops. It is prescribed for bruises and sprains.

Arsenic.—Doses: 1 to 6 grains for horses; 3 to 9 grains for cattle; 1 to 2 grains for sheep and hogs; $\frac{1}{50}$ to $\frac{1}{8}$ of a grain for dogs. Arsenic should be well diluted when given to animals. Fowler's solution is a convenient preparation of arsenic to keep on hand. Doses: Horses, 1 dram to 1 ounce; cattle, 2 drams to $1\frac{1}{2}$ ounces; sheep and pigs, 10 to 40 drops; dogs, 1 to 8 drops. Each ounce contains between four and five grains of arsenic.

Belladonna.—Fluid extract of belladonna root is the preparation generally used. Doses: Horses, $\frac{1}{4}$ to 1 dram; cattle, 1 to 2 drams; sheep 15 to 30 drops; pigs, 3 to 10 drops; dogs, $\frac{1}{2}$ to 3 drops.



A CORNER IN DR. FAIR'S DRUG SHOP.
 Veterinary prescriptions are filled with as much care as in human practice.
 (Photographed especially for this book.)



THE TWENTIETH CENTURY WAY OF MAKING
 VETERINARY CALLS.
 This shows Dr. Fair and one of his assistants leaving the Veterinary Hospital to make professional calls.
 (Photographed especially for this book.)

Buchu.—The dose of powdered leaves and fluid extract is about the same. Doses: Horses, $\frac{1}{2}$ to $1\frac{1}{2}$ ounces; cattle, 1 to 2 ounces; sheep and hogs, $\frac{1}{2}$ to $1\frac{1}{2}$ drams; dogs, 10 to 50 drops.

Borax.—Borax is used as an antiseptic, astringent and parasite killer, mostly for mouth or skin ailments. Dissolve one ounce or more in a quart of water and apply two or three times a day.

Boric Acid.—Dose for horses and cattle from 1 to 4 drams; sheep and hogs, $\frac{1}{2}$ dram; dogs, 2 to 15 grains. This also makes an excellent dressing for wounds and for eye ailments.

Bismuth.—Bismuth is used to allay irritation in dyspepsia, to arrest vomiting and to correct catarrhal ailments of the bowels. It is also used extensively to correct itching skin diseases in dogs and is usually combined with wool-fat. Doses: Horses, 1 to 4 drams; cattle, 2 to 6 drams; sheep and hogs, $\frac{1}{2}$ dram; dogs, 3 to 25 grains.

Bromide of Potash.—Doses: Horses, from $\frac{1}{2}$ to 2 ounces; sheep and pigs, 1 to 3 drams; dogs, 5 to 50 grains. It should always be dissolved in warm water when giving it.

Black Haw.—This is given to prevent abortion and to stimulate the urinary and generative organs. Dose of fluid extract for mares is 1 to 3 ounces; cows, 2 to 4 ounces; sheep and hogs, a teaspoonful; bitches, fifteen drops to $1\frac{1}{2}$ drams. Mares and cows that abort annually should be treated with small doses two or three times a day, but in acute cases give a large dose and it will often prevent a miscarriage.

Calomel.—Doses: Horses, $\frac{1}{4}$ to 1 dram; cattle, $\frac{1}{2}$ dram to 2 drams; sheep and hogs, 3 to 15 grains. As a purgative it should be given with cooking soda. It is a specific for thrush and dries up wounds. It is also used to clear opacity of the eye.

Copperas.—Copperas or Sulphate of Iron is one of the least expensive and most useful preparations of iron, although there are many. Doses: Horses, $\frac{1}{2}$ to $2\frac{1}{2}$ drams; cattle, 2 to 3 drams; sheep and hogs, 10 to 30 grains. It acts as a blood tonic, astringent and disinfectant.

Cannabis Indica.—The fluid extract of Indian cannabis is the preparation mostly used in veterinary practice and is given to quiet the nervous system and relieve pain. Doses: Horses 2 to 6 drams; cattle, 3 to 10 drams; sheep and hogs, 10 to 30 drops; dogs, 1 to 12 drops.

Camphor.—Dose of gum camphor for horse, 1 to 2 drams; cattle 2 to 4 drams; sheep and pigs, 10 to 40 grains; dogs, 1 to 8 grains. Camphor is soluble in ether, alcohol, chloroform and milk, but requires about seven hundred parts water to dissolve it and when powdering gum camphor add a few drops of alcohol. Spirits of camphor contains ten per cent. camphor gum and ninety per cent. alcohol. Camphor is given and applied to allay pain.

Cantharides—Spanish Fly.—When given in small doses it stimulates both the genito-urinary tract and the kidneys to action; when applied externally it blisters. The dose for horses and cattle is 5 to 35 grains; sheep and hogs, 3 to 10 grains; dogs, $\frac{1}{2}$ to 2 grains. One part of powdered cantharides to 4, 6 or 8 parts lard makes an active yet inexpensive blister.

Caraway Seed.—The dose for a horse is 1 ounce; ox, from 1 to 2 ounces; sheep and pigs, 2 drams. Its action is to improve the condition of the stomach.

Chloral Hydrate.—The dose for a horse is from $\frac{1}{2}$ to $1\frac{1}{2}$ ounces, accord-

ing to the effect you desire to produce; cattle, $\frac{1}{2}$ to 2 ounces; sheep and pigs, $\frac{1}{2}$ to 1 dram; dogs, 2 to 20 grains. Chloral should always be well diluted with water when given and a solution of it should not be left standing long for it changes into chloroform. It is generally given to relieve pain or quiet an animal during a surgical operation.

Colodium Flexible.—This is applied to wounds for the purpose of forming an air-tight dressing and also for holding the edges of small wounds in a fixed position until they heal. It is also used to hold absorbent cotton or oakum on a raw sore.

Corrosive Sublimate.—It is used principally externally in the treatment of wounds or as an external application to rid the skin of parasitic life. It is generally used in the strength of 1 to 500, 1 to 1000 or 1 to 2000 but when used as an uterine injection, 1 to 5000 or even 1 to 8000 parts water is about right. Fifteen grains dissolved in a pint of water makes a 1 to 500 solution.

Digitalis.—The fluid extract is the most convenient preparation to keep on hand. Doses: Horses, $\frac{1}{4}$ to 1 dram; cattle, $\frac{1}{2}$ to 2 drams; sheep and hogs, 5 to 20 drops. Digitalis stimulates the heart and is used in dropsical ailments mixed with acetate of potash and saltpeter.

Epsom Salts—(Sulphate of Magnesia).—This is the common cathartic for cattle and when a laxative effect is desired give from 4 to 6 ounces daily, but when a brisk purgative effect is desired give from $1\frac{1}{2}$ to 2 lbs. The dose for horses is about two-thirds as much as for cattle; sheep and hogs, 4 to 6 ounces. A cathartic effect can generally be obtained in from twelve to twenty hours.

Ergot.—The fluid extract of ergot is usually given and its medical uses are to assist in parturition and to prevent uterine hemorrhage as well as to prevent hemorrhage during and after operations. Dose for horse or cow, $\frac{1}{2}$ to 3 ounces; sheep and swine, 1 to 3 drams; dogs, $\frac{1}{4}$ to 1 dram. The dose should be repeated every 30 or 40 minutes until the desired effect is produced. Ergot loses its strength with age.

Ether—(Sulphuric Ether).—Ether is a safe anæsthetic for it never paralyzes a healthy heart. Doses: Horses, 1 to 2 ounces; cattle, $1\frac{1}{2}$ to 3 ounces. By adding an equal quantity of alcohol and ten times as much cold water it makes a good stimulant.

Formalin or Formaldehyde.—This is the most powerful antiseptic, disinfectant and deodorant and when applied to wounds should be used in the form of a one-quarter to three-quarter of one per cent. solution but when used to cleanse hands and instruments a one-half to a two per cent. solution is used. When destroying the disagreeable smell of fecal matter, a one per cent. solution is sufficient, but when disinfecting a stable by spraying, a twenty per cent. solution sprayed into the air is not at all dangerous. It is sometimes given to correct bowel ailments.

Gentian.—Gentian is a bitter tonic and one of the most useful drugs for use on the farm. Doses: Horses, 3 or 4 drams; ox, 1 to 2 ounces; sheep and swine, $\frac{1}{2}$ dram; dogs, 2 grains.

Ginger.—Ginger acts as a stimulant and tones the stomach. Doses: Horse, about 1 ounce; ox, 2 ounces; sheep and swine, 2 drams. Ginger is fed to live stock in combination with other drugs producing a beneficial effect.

Glauber's Salts—(Sulphate Soda).—The dose for a horse when a purgative effect is desired is from 12 to 24 ounces, but seldom give less than 20 ounces; cattle, 1 to 2 pounds; sheep and hogs, 2 to 4 ounces. When a laxative effect is desired give about one-sixth of the above dose daily. Ginger or red pepper should be given with salts to prevent griping.

Iodine.—The dose of resublimed iodine for horses is from 15 to 30 grains; cattle, 20 to 40 grains; sheep, 10 to 35 grains; pigs, 5 to 25 grains; dogs, one-sixth to one grain. Iodine, when given inwardly, acts as a blood purifier and absorbent. When applied externally it has a tendency to reduce bunches. There are many preparations of iodine and nearly all of them are useful in veterinary practice.

Lime.—Lime is often used in cases of diarrhea, and is combined with opium and tannic acid. The dose for horses is from 2 drams to 1½ ounces; cattle, ½ ounce to 2 ounces; sheep and pigs, from 20 to 40 grains or more; dogs, 2 to 25 grains. The dose of lime water for horses is from 4 ounces to 16 ounces; cattle, one-third more; sheep and hogs, 2 to 3 ounces; dogs, 1 to 6 drams. The chloride of lime is used as a deodorizer and a disinfectant and is very useful in destroying foul odors about the stable where there may be diseased or decomposing dead animals.

Lobelia.—The dose of fluid extract of lobelia for a horse is from ½ dram to 2 drams; ox, from 1 to 3 drams; sheep and swine, from 5 to 15 grains. Lobelia is given to relieve air passage troubles and it very often produces good results.

Mustard (Sinapis).—Mustard is useful as a counter-irritant in sore-throat, bronchitis, pneumonia and pleurisy; also, the volatile oil obtained from black mustard is a blister and in combination with water acts quickly.

Nux Vomica.—Nux Vomica is a tonic and nerve stimulant. Dose: Horses, 1 dram; ox, 2 drams; sheep and hogs, 5 to 15 grains; dogs, ¼ to 2 grains.

Opium.—There are many preparations of opium and the drug is given in conjunction with other drugs with good results. Tincture of opium (laudanum) is commonly used by horsemen. Doses: Horses, ½ to 2 ounces; cattle, 1 to 3 ounces; sheep and hogs, 1 to 3 drams; dogs, 1 to 35 drops. Camphorated tincture of opium (paregoric) is very often used in dog practice, the dose being from 2 to 15 drops for young dogs and from 1 to 3 drams for old dogs. Morphine and codeine are also preparations of opium, but not used so extensively on the stock farm.

Poke—(Phytolacca).—The dose of fluid extract of phytolacca root (poke root) for a horse is from 2 to 6 drams; cows, ½ to 2 ounces; sheep, 15 drops to 1½ drams; pigs, 10 drops to 1 dram. The principal use of this drug is in mammitis (garget) to check the inflammation of the bag and prevent the formation of pus. Apply the extract locally in the proportion of one part to six or eight parts vaseline or sweet oil.

Resin.—Resin acts on the kidneys of all kinds of live stock. Dose: Horse, 4 to 6 drams; ox, ½ to 1 ounce; sheep, 2 to 3 drams; hogs, 1 to 2 drams; dogs, 5 to 20 grains.

Saltpeter—(Nitrate of Potash).—Large doses generally irritate the stomach, bowels and kidneys, but moderate doses purify the blood, reduce fever and act on the kidneys. Doses: Horses, 2 to 4 drams; cattle, 3 to 6 drams; sheep and hogs, 10 to 25 grains; dogs, 5 to 20 grains.

Soda.—There are many different preparations of soda, but perhaps the one mostly used is bicarbonate of soda (baking soda). This is a very useful farm drug for it is both given inwardly and applied locally. Doses: Horses, 2 drams to 1½ ounces; cattle, ½ ounce to 3 ounces; sheep and hogs, ½ dram to 1 dram. It is given for stomach and bowel ailments and, dissolved in water, to relieve itching skin troubles—one ounce to a quart of water makes a useful skin lotion. It is also used to correct leucorrhea.

Sugar of Lead—(Acetate of Lead).—This is perhaps the most useful preparation of lead to keep on the farm. It is given inwardly to check hemorrhages from the stomach and lungs and for diabetes and diarrhea. It is also useful as a wound dressing with sulphate of zinc. Doses: Horses and cattle, ½ to 1 dram; sheep and pigs, 5 to 15 grains; dogs, ¼ to 3 grains. Dissolve one and one-quarter ounces of sugar of lead and one ounce of sulphate of zinc in a quart of water and apply to sore back and shoulders four or five times a day and it will help them.

Sulphate of Zinc.—There are many preparations of zinc; the sulphate is mostly used externally in healing lotions or eye washes. Dissolving one ounce in a quart of water and adding the same quantity of acetate of lead makes a nice wound dressing and is also useful in the treatment of cracked heels and sore shoulders. The oxide of zinc is used as a healing powder and is often mixed with vaseline to make a healing ointment.

Sweet Spirits of Nitre.—Dose for a horse, 1 to 2 ounces; ox, 2 to 4 ounces; sheep, 2 to 4 drams; dog, ½ to 2 drams. It is given as a stimulant and has a direct action upon the kidneys.

Tannin—(Tannic Acid).—Dose for horses, ½ to 3 drams; cattle 1 to 4 drams; sheep and pigs, ½ to 2 drams. It is also used in ointment form, one part tannic acid to four parts vaseline or benzoinated lard or glycerine. It is given as an astringent in bowel ailments and very often used in solution to toughen tender shoulders.

Turpentine (Oil of Turpentine).—Turpentine is a vermicide and stimulant, also a counter-irritant when applied externally. Dose for horses when a stimulant and kidney effect is desired, 2 to 4 drams every five or six hours; cattle, 3 to 6 drams. When given to kill worms from 1 to 4 ounces can be given horses and cattle, but it should be mixed with ten times its bulk of cotton seed oil, linseed oil or milk. Whenever turpentine is given as a drench it is done with some risk.

Vinegar—(Acetic Acid).—Instead of acetic acid vinegar is often used in removing warts and other dry excrescences.

FIFTY MODERN PRESCRIPTIONS IN COMMON USE BY THE VETERINARY PROFESSION.

(In bad cases where other remedies fail, try these.)

WHITE LINIMENT.

Turpentine	2 ounces.
Aqua Ammonia	2 ounces.
Olive or Raw Linseed Oil	3 ounces.

This is a very useful liniment for both the horse and stable, but if a milder effect is desired add more oil. It should be applied once or twice daily.

MILD STABLE LINIMENT.

Turpentine	2 ounces.
Aqua Ammonia	2 ounces.
Soap Liniment	6 ounces.

This liniment acts mildly and is useful for sprains and bruises, especially when occurring in young animals. Apply to injured or sore parts twice daily.

COUGH MIXTURE.

Fluid Extract of Belladonna	2 ounces.
Iodide of Potassium	1½ ounces.
Muriate of Ammonia	3 ounces.
Water	1 quart.

Give three ounces at a dose three or four times a day.

FOR KILLING LICE.

Boil five ounces of crushed stavesacre seeds in a gallon of water gently for an hour, then fill to the original gallon; apply daily; will kill all kinds of lice on live stock.

HOOF OINTMENT.

Crude Petroleum	½ pint.
Neat's-foot Oil	1 pint.
Raw Linseed Oil	1 pint.
Oil of tar	½ pint.

Apply to hoofs once a day when needed.

FOR STOPPING BLEEDING.

Apply either hot or cold water constantly, or apply Adrenalin, or Monsell's Solution of Iron. When applying Adrenalin Chloride add 1,000 parts water. Applied direct to the wound it will generally stop bleeding quickly, but when a large blood vessel has been opened it should be tied. Furthermore, don't rely on styptics always when the animal is under an anæsthetic. Sugar of Lead or Alum dissolved in water acts nicely.

HEALING LOTION.

Sugar of Lead	¼ pound.
Sulphate Zinc	3 ounces.
Carbolic Acid	3 ounces.
Water	1 gallon.

This makes an excellent healing lotion and is not very expensive. It should be applied two or three times a day.

HEALING LOTION.

Corrosive Sublimate20 grains.
Water 1 quart.

This makes an inexpensive remedy for healing wounds. Should be applied two or three times a day.

EYE LOTION.

Boric Acid10 grains.
Borate of Soda 8 grains.
Water 1 ounce.

This makes an excellent eye lotion and it should be applied two or three times a day.

EYE LOTION.

Fluid Extract of Belladonna½ ounce.
Water 1 pint.

This makes an excellent eye wash in cases of simple ophthalmia and should be applied three or four times daily.

EYE LOTION.

Sulphate of Zinc 1 dram.
Fluid Extract of Belladonna 1 ounce.
Water 1 pint.

This makes a useful eye wash and should be applied two or three times a day.

COUGH MIXTURE.

Fluid Extract of Belladonna..... 1 ounce.
Fluid Extract Lobelia 4 ounces.
Dilute Hydrocyanic Acid 1 ounce.
Sweet Oil 1 quart.

Give one ounce at a dose three or four times a day.

HOOF OINTMENT.

Lamp Black ½ ounce.
Lanolin (Wool Fat)..... 1 pound.
Apply to hoofs once a day and it will soften them and start them growing.

CATHARTIC FOR HORSES.

Barbadoes Aloes 7 drams.
Calomel 20 grains.
Ginger 3 drams.

Make into a bolus and give at one dose.

CATHARTIC FOR CATTLE.

Epsom Salts1 to 2 pounds.
Ginger (Tincture)1½ ounces.
Salt ½ pound.
Water3 pints.

For a brisk cathartic effect add forty drops Croton Oil.

CANKER OF EAR.

Cooking Soda 2 drams.
Liquor Sub-acetate Lead 1 ounce.
Extract Opium 1 dram.
Glycerine 4 drams.
Water 3 ounces.

Pour a teaspoonful at a time into ear once a day.

FOR GOITRE.

Give one-dram doses Desiccated Thyroids to horses or from two to five grains to dogs once or twice a day to reduce goitre. Or, give thirty grains Re-sublimed Iodine at a dose to horses or ½ grain at a dose daily to medium sized dogs.

FOR CRACKED TEATS IN COWS.

Apply Glycerine of Tannin two or three times a day.

FOR DESTROYING PIN WORMS.

Dissolve one ounce Tannin in one quart of water, or dissolve one and one-quarter ounces of Copperas in a gallon of water, or make Quassia Tea, or wash out bowel with one part Coal-Tar Disinfectant and fifty parts water every few days.

HEALING LOTION.

Carbolic Acid 1 ounce.

Water 1 quart.

This makes a useful healing lotion for all kinds of wounds and should be applied two or three times a day.

HEALING LOTION.

Permanganate Potash 2 drams.

Water 1 quart.

This lotion deodorizes and disinfects foul smelling wounds and should be applied two or three times a day. As an eye wash, use about one part to ten or fifteen hundred parts water; as a uterine injection, one part to two or three thousand parts water.

ZINC OINTMENT.

Oxide of Zinc $1\frac{1}{4}$ ounces.

Benzoated Lard 4 ounces.

This makes a fairly good healing ointment for dry sores.

HEALING SALVE.

Carbolic Acid 1 part.

Vaseline 8 parts.

This makes a nice salve for healing dry surface sores and it should be applied twice a day.

EYE LOTION.

Eserine 4 grains.

Water 1 ounce.

This eye lotion relieves congestion and inflammation of the eye and should be applied two or three times a day.

FOR CATARRHAL FEVER.

Powdered Opium 1 ounce.

Pulverized Camphor 1 ounce.

Sulphate of Quinine 1 ounce.

Powdered Gentian 3 ounces.

Muriate of Ammonia 4 ounces.

Make into twenty powders and give one at a dose in feed or with a spoon three or four times a day.

COLIC MIXTURE.

Aromatic Spirits of Ammonia $\frac{1}{2}$ ounce.

Fluid Extract Belladonna 1 dram.

Sulphuric Ether $\frac{1}{2}$ ounce.

Fluid Extract Ginger 2 drams.

Hypo-sulphite of Soda 1 ounce.

Water 1 pint.

This is a good colic remedy and should be given at one dose and repeated in forty or fifty minutes if a recovery has not taken place.

COOLING ASTRINGENT LOTION.

Sulphate Zinc $1\frac{1}{4}$ ounces.

Sugar of Lead $1\frac{1}{2}$ ounces.

Water 1 quart.

Remedy for sore necks, shoulders and backs and for wounds and bruises.

COLIC MIXTURE. (FLATULENT.)

Tincture Ginger 1 ounce.

Fluid Extract Hyocyanus $\frac{1}{2}$ ounce.

Aromatic Spirits Ammonia 1 ounce.

Salicylic Acid 2 drams.

Water 1 pint.

Give at one dose and repeat in forty or fifty minutes if necessary. If this remedy seems to fail in relieving bloat give one grain Eserine hypodermically and repeat in one hour if necessary.

BLISTER.

Biniodide Mercury	1 dram.
Lard or Lanolin	1 ounce.

BLISTER.

Powdered Cantharides	1½ drams.
Lard or Lanolin	1 ounce.

BLISTER AND ABSORBENT.

Powdered Cantharides	2 drams.
Red Iodide Mercury	1 dram.
Lard or Lanolin	3 ounces.

BLISTER.

Volatile Oil of Mustard	2 drams.
Aqua Ammonia	1½ ounces.
Olive Oil	8 ounces.

Before blistering clip off hair and rub the ointment or liniment in thoroughly. Avoid letting the animal lick or bite the blistered parts for twenty-four or forty-eight hours after it is put on.

SOOTHING LOTION.

Fluid Extract of Witch-hazel.....	6 parts.
Fluid Extract Opium	1 part.
Tincture Arnica	2 parts.
Tincture Aconite	1 part.

Remedy for sprains and bruises.

COLDS AND CATARRHAL AFFECTIONS.

Sulphate of Quinine	1 ounce.
Pulverized Opium	4 drams.
Pulverized Carbonate of Ammonia	2 ounces.
Powdered Nitrate of Potash	4 ounces.
Powdered Gentian	4 ounces.

Make into fifteen powders and give one at a dose every three or four hours. Will generally break up a cold and prevent inflammatory ailments.

CATARRHAL FEVER.

Sulphate of Quinine	1 ounce.
Acetanilide	2 ounces.
Sweet Spirits of Nitre	5 ounces.
Alcohol	1 pint.

Give one ounce at a dose in a pint of cold water every two or three hours during the day until a recovery takes place.

FOR NASAL GLEET.

Oxide of Arsenic	1 dram.
Pulverized Sulphate Copper	4 drams.
Pulverized Gentian	4 ounces.
Pulverized Fenugreek	4 ounces.

Make into two dozen powders and give one at a dose in feed two or three times a day.

FOR THUMPS.

Give Sulphate of Morphine hypodermically in doses of from three to six grains. Will generally relieve thumps.

DRYING POWDER.

Alum (Dried)	1 ounce.
Pulverized Sulphate Copper	1 ounce.
Powdered Sulphate Iron	1 ounce.
Calomel	1 ounce.
Wood Charcoal	3 ounces.

Apply to raw unhealthy sores once or twice a day.

DRYING HEALING POWDER.

Oxide Zinc 2 ounces.
 Powdered Alum 2 ounces.
 Boric Acid 4 ounces.

This makes a nice dressing for open sores and should be applied twice a day.

FOR QUITTOR.

Corrosive Sublimate 1 ounce.
 Hydrochloric Acid 3 ounces.

Drop a small quantity into quittor every day for four or five days. This is also useful for removing warts and for bad cases of foot-rot.

FOR REMOVING WARTS.

Apply Acetic Acid or Chromic Acid, or Lunar Caustic, or Salicylic Acid. Sometimes Castor Oil will reduce them.

FOR QUITTOR.

First apply peroxide of hydrogen, fifteen minutes later inject some Tincture Iodine into sinus and apply to swollen quarter once or twice a day for a few days, then every two or three days. This treatment generally proves satisfactory.

FOR ROUP IN CHICKENS.

Paint the head, mouth and throat with Tincture Iodine.

FOR TENDER SHOULDERS AND COLLAR AND SADDLE GALLS.

Dissolve two ounces Tannic Acid in twelve ounces of Alcohol, adding one quart of water and applying to shoulders and back three times a day, first sponging the parts off with salt and cold water.

**FOR CRACKED HEELS IN HORSES AND CHAPPED TEATS
IN COWS.**

Apply equal parts Friar's Balsam and Glycerine to sores two or three times a day. In some cases where there is no discharge apply Flexible Colodium once a day and it will act very well.

FOR LEUCORRHEA.

Dissolve ten or twelve grains powdered alum to each ounce of water and use as an injection once or twice a day; or dissolve two drams permanganate potash in a gallon or more of water. Or, dissolve one and one-half ounces Sulphate Zinc and one and one-half ounces Acetate of Lead in one gallon of water, adding four ounces tincture opium, and apply once or twice a day.

STOCK FOODS, CONDITION POWDERS AND POULTRY FOODS.

For Horses, Cattle, Sheep, Hogs and Poultry.

STOCK FOOD.

Ground Gentian	2 pounds.
Pulverized Fenugreek	2 pounds.
Glauber's Salts (Soda Sulphate)	3 pounds.
Common Table Salt (Sodium Chloride)	3 pounds.
Oil Meal	5 pounds.
Cotton Seed Meal	10 pounds.

Mix thoroughly. For horses and cattle give two or three tablespoonfuls at a dose in feed twice or three times a day; for sheep and hogs give a teaspoonful or two at a dose twice daily.

CONDITION POWDER.

Powdered Gentian	1 pound.
Ground Nux Vomica	½ pound.
Powdered Fenugreek	1 pound.
Bicarbonate Soda	1 pound.
Powdered Rosin	½ pound.

Mix thoroughly and give a tablespoonful at a dose in feed two or three times a day to horses or cattle and a teaspoonful to every three or four sheep or hogs.

POULTRY FOOD.

Ground Buckwheat	2 pounds.
Ground Corn	4 pounds.
Ground Oats	4 pounds.
Oil Meal	2 pounds.
Ginger	1 pound.
Ground Gentian	1 pound.
Pulverized Fenugreek	1 pound.
Pulverized Anise	1 pound.

Give a teacupful to every twenty chickens with other feed twice a day.

POULTRY TONIC.

Cayenne Pepper	1 pound.
Black Pepper	½ pound.
Ginger	2 pounds.
Baking Soda	1 pound.
Pulverized Fenugreek	½ pound.
Ground Gentian	1 pound.

This makes an excellent tonic to mix with chicken feed and a teaspoonful is enough for six or eight chickens and it should be given once or twice a day.

STOCK TONIC.

Ground Ginger	2 pounds.
Ground Gentian	2 pounds.
Powdered Red Cinchona	1 pound.
Ground Nux Vomica	1 pound.
Baking Soda	2 pounds.
Powdered Wood Charcoal	2 pounds.
Pulverized Fenugreek	3 pounds.
Pulverized Anise	2 pounds.

Mix thoroughly. For horses give a tablespoonful or two; for cattle give two or three tablespoonfuls; for sheep $\frac{1}{2}$ a teaspoonful and for hogs $\frac{3}{8}$ of a teaspoonful at a dose in feed two or three times a day.

STOCK FOOD.

Cooking Soda	2 pounds.
Ground Ginger	2 pounds.
Ground Gentian	1 pound.
Pulverized Fenugreek	2 pounds.
Powdered Wood Charcoal	2 pounds.
Oil Meal	5 pounds.
Common Table Salt	1 pound.
Middlings or Cotton Seed Meal	10 pounds.

For horses and cattle give two or three tablespoonfuls at a dose in feed twice a day; for sheep and swine give a teaspoonful or two twice a day.

CONDITION POWDER.

Ground Gentian	1 pound.
Ginger	1 pound.
Cooking Soda	1 pound.
Fenugreek	1 pound.
Powdered Saltpeter	1 pound.

Mix and give a tablespoonful or two at a dose to horses or cattle in feed or with a spoon two or three times a day; for sheep and hogs one-sixth as much.

TONIC POWDER.

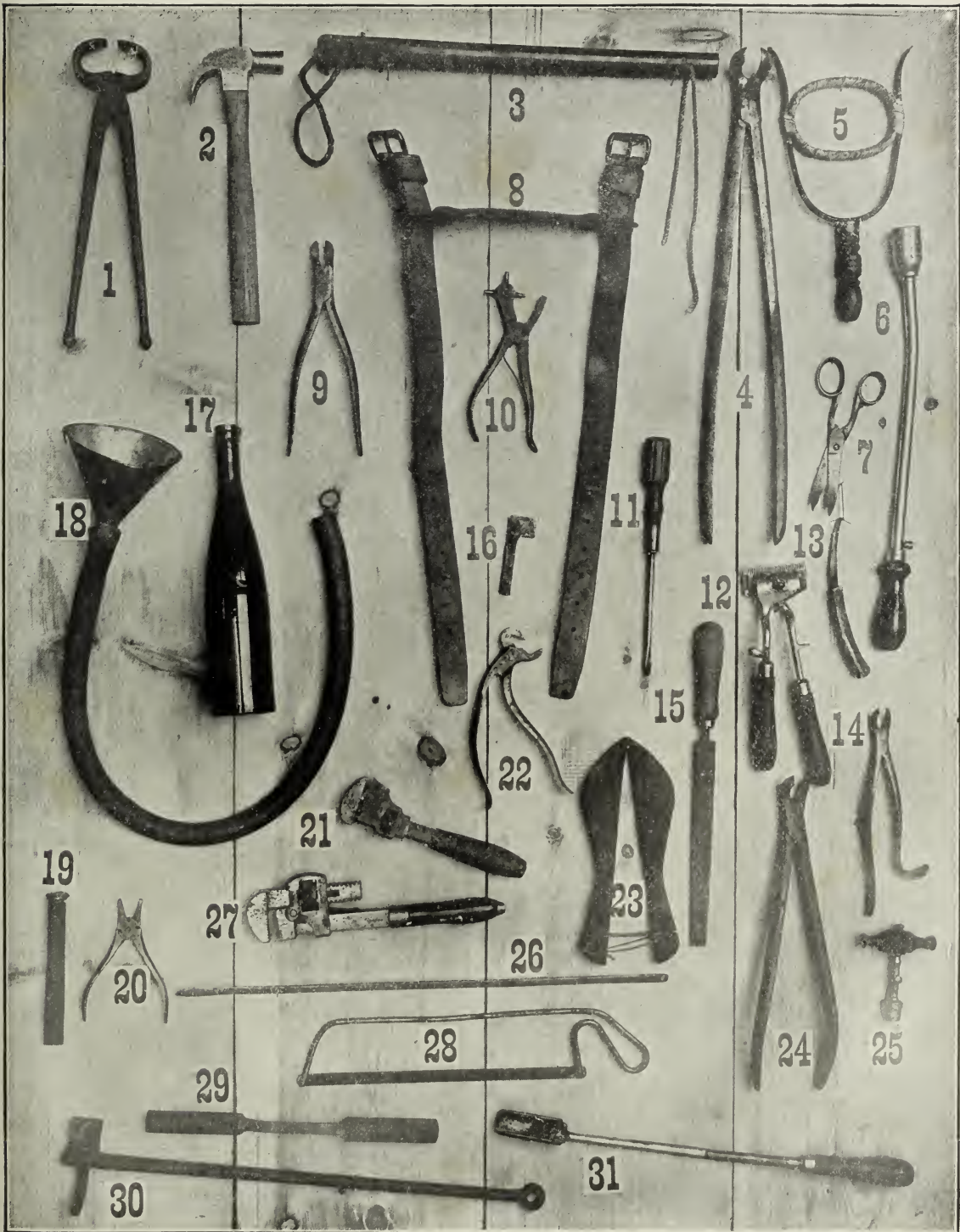
Powdered Sulphate Iron	2 ounces.
Sulphate Quinine	1 ounce.
Powdered Nux Vomica	2 ounces.
Powdered Gentian	4 ounces.
Powdered Fenugreek	3 ounces.

Make into twenty powders and give one at a dose in feed or with a spoon to horses or cattle two or three times a day; for sheep and hogs give one-sixth as much.

USEFUL INSTRUMENTS AND TOOLS KEPT AT DR. FAIR'S MENTOR STOCK FARM.

These things should be kept on every farm.
(See Illustrations.)

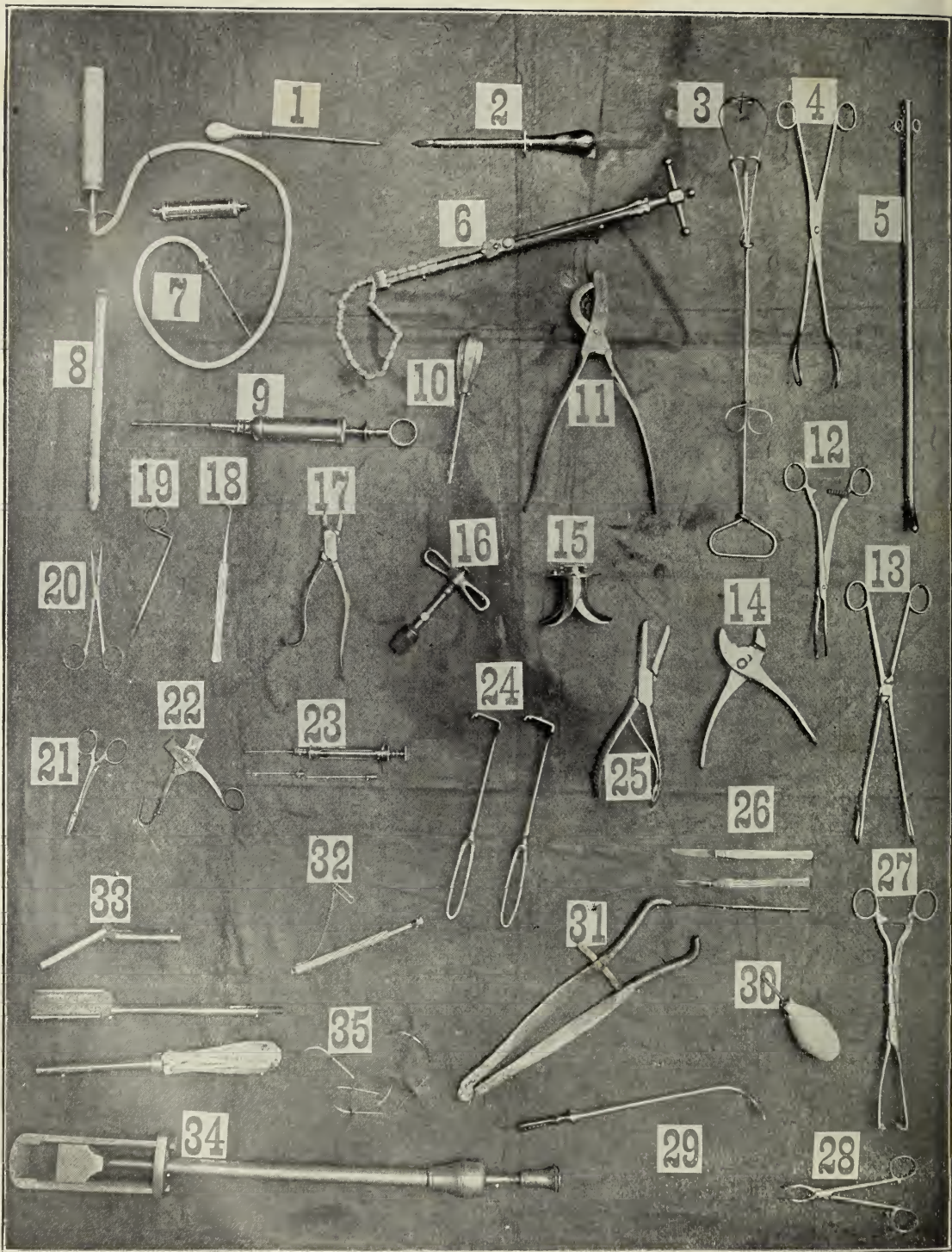
- No. 1. Pincers for pulling off shoes or cutting edges off hoofs.
- No. 2. A claw-hammer.
- No. 3. A twitch made of a buggy spoke with hole in each end. Can be used by one person by tying lower rope in throat latch or, if applied to hock of cow, tie around lower part of hind leg.
- No. 4. A pair of forceps large enough to pull a grinder tooth of a horse or ox.
- No. 5. An inexpensive balling iron made by a blacksmith out of one-half round steel. This is a useful instrument to keep mouth open while examining the teeth of horses or cattle or when using a probang.
- No. 6. A balling gun for shooting balls down horses or cattle. I found this a useful instrument at the Cleveland Zoo when giving the sick lion cathartic pills. By teasing him he opened his mouth and while open I shot the pills down him.
- No. 7. A pair of curved scissors for trimming fetlocks.
- No. 8. Very useful hoppers for fastening either the fore or hind legs together to prevent the horse or ox from striking or kicking. They should be buckled above the knee or hock but can be fastened lower down.
- No. 9. A pair of cutting forceps for shortening small teeth.
- No. 10. A harness punch for punching holes of different sizes in leather, canvas or cloth.
- No. 11. A common strong heavy screw-driver.
- No. 12. A pair of hand clippers that can be used with one or both hands.
- No. 13. A medium weight blacksmith's hoof knife that should be kept on every farm.
- No. 14. A pair of small forceps for pulling wolf teeth in horses and small teeth from other animals.
- No. 15. A file.
- No. 16. A clinch cutter, etc.
- No. 17. A wine bottle for drenching horses and cattle.
- No. 18. A tin funnel connected with rubber tube. Used to give enemas (injections) to horses and cattle. For small animals use small funnel and small rubber tube.
- No. 19. A common steel chisel, useful for many purposes.
- No. 20. A small pair of pliers.
- No. 21. A monkey wrench.
- No. 22. A pair of dental bone-cutting forceps. Useful in shortening the nippers of old horses when they are too long.



USEFUL INSTRUMENTS AND TOOLS FOR THE STOCK FARM.

(See explanation.)

(Photographed at Dr. Fair's "Mentor Stock Farm" at Mentor, Ohio especially for this book.)



USEFUL VETERINARY SURGICAL INSTRUMENTS.

(See explanation.)

(Photographed at Dr. Fair's Veterinary Hospital especially for this book.)

No. 23. A pair of wooden clamps used when castrating when the cord is burned off with a hot knife-shaped iron. They are also useful when burning off tumors that have necks.

No. 24. A pair of large forceps for pulling molar teeth.

No. 25. A trephine used for sawing out a circular piece of bone when operating for nasal gleet or when an upper grinder tooth has to be punched out.

No. 26. A long seton or roweling needle for inserting setons or rowels under the skin of sweened or diseased animals.

No. 27. A large combination pipe wrench.

No. 28. A bone saw for removing horns when the farmer has no de-horning tools; also useful in sawing meat bones.

No. 29. A combination, flat and one-half round file used in doing horse dentistry.

No. 30. An old-fashioned turnkey used in place of molar forceps in extracting grinder teeth. This is an inexpensive tool that I used many years ago with good results; however, the forceps are to be preferred.

No. 31. A common and useful dental float that should be kept on every farm unless a veterinarian looks after the teeth of the horses.

USEFUL SURGICAL INSTRUMENTS FOR THE STOCK FARM.

(See Illustrations.)

No. 1. Is a trocar with canula for puncturing horses or tapping abscesses. The trocar used for horses should be much smaller than the one used for cattle.

No. 2. Is a trocar and canula suitable for puncturing cattle for bloat.

No. 3. Is a useful forcep (Colson's Pig Forcep) used for taking pigs away from a sow. This is a very useful instrument and not expensive.

No. 4. Is a forcep used for taking pups away from a bitch and can also be used on sows.

No. 5. Is a catheter used for drawing urine from mares.

No. 6. Is an ecraseur used for castrating animals and cutting off tumors.

No. 7. Is a bicycle pump with rubber tube and milking tube at end, also barrel for holding absorbent cotton to keep dust or dirt from getting into the udder when treating for milk fever. Hundreds of farmers have written me that they applied the air treatment with a common bicycle pump, rubber tube and goose quill and thus saved valuable cows; however, I recommend the use of the barrel filled with absorbent cotton to sterilize the air; or, best of all, use oxygen.

No. 8. Is a short seton or roweling needle, used in treating chronic cases of sweeny or drawing a tape through an abscess.

No. 9. Is a brass veterinary syringe suitable for giving medicine to animals or injecting medicine into wounds.

No. 10. Is a trephine for cutting out a circular piece of bone when operating for grub in the head of sheep or reaching an abscess under a flat bone about the head.

No. 11. Is an emasculator used in castrating animals. This is an instrument that every stock breeder who does his own castrating should have.

No. 12. Is a pair of splinter forceps that can also be used for picking up an open blood vessel before it is tied to stop bleeding.

No. 13. Is a pair of placenta forceps useful when operating on ewes, sows or bitches; besides, they are useful for other purposes.

No. 14. Is a very handy tool useful for many different purposes.

No. 15. Is a tracheotomy tube for placing in the windpipe of animals that have throat trouble causing difficulty in breathing. It is often necessary to use this tube in case of colt distemper.

No. 16. Is a trephine of medium size for boring through the bones of face when treating nasal gleet in horses or cattle.

No. 17. Is a pair of extracting forceps suitable for pulling small teeth.

No. 18. Is a tenaculum or hook with a handle. This is used to catch into and hold the parts when removing warts and tumors that cannot be held by the hand.

No. 19. Is a guttered probe or director used in exploring wounds or directing a knife when cutting deep and also used in rimming out cow's teats or draining an abscess.

No. 20. Is a pair of long slim splinter forceps for removing foreign bodies without making a large wound.

No. 21. Is a pair of artery forceps used to snap onto and close a blood vessel until it is tied.

No. 22. Is a pair of seton scissors, but is also very handy in cutting off the tails of lambs or pups.

No. 23. Is a hypodermic syringe and needles. This is a very useful instrument on the farm and must be used when testing cattle with tuberculin for tuberculosis or testing horses with mallein for glanders and giving medicine hypodermically.

No. 24. Are two inexpensive spreaders or hooks used for keeping a wound open when cutting or stitching for deep seated trouble.

No. 25. Is a pair of strong bone forceps that are useful for a great many different purposes on the stock farm.

No. 26. Is a picture of three knives that are not expensive, but useful in the stable and on the farm.

No. 27. Is a pair of forceps with hooks for grabbing a tumor or wart while operating.

No. 28. Is a pair of saw-toothed forceps for picking up an open blood vessel or pulling out splinters, snags or nails.

No. 29. Is a smooth steel crooked probe for exploring wounds.

No. 30. Is a bulb syringe, not expensive, that can be used for many purposes by using stems of different lengths.

No. 31. Is a steel clamp with set screw, useful when castrating where the cord is burned off, or in burning off tumors.

No. 32. Is a thermometer for taking the temperature of animals; this is an instrument that should be kept in every home as it can be used either for people or for animals.

No. 33. Is a dental float with one crooked shank. This is suitable for rounding the first four grinders. These teeth are not so easily rounded with a straight float as with a crooked one.

No. 34. Is a sliding chisel, used for cutting off abnormal growths of grinder teeth.

No. 35. Are surgical needles for stitching wounds and every farmer should keep a few of them on hand.



THE CANADIAN STOCK FARM WHERE DR. FAIR SPENT HIS BOYHOOD DAYS.

Dr. Fair was born and brought up on this beautiful Canadian Stock Farm and here he learned his first lessons in practical farming, horse shoeing and raising pedigreed live stock.

(Photographed especially for this book.)



DR. FAIR'S "MENTOR STOCK FARM."

This stock farm is at Mentor, Ohio, near the old home of President Garfield.

(Photographed especially for this book.)

BREEDING AND FEEDING LIVE STOCK FOR PROFIT.

(How to Produce Milk, Wool, Muscle and Fat.)

BREEDING.

The most valuable lessons in breeding are to be learned by consulting the successful breeder. Every stock raiser should be a good judge of the kind of animals he is producing; this can only be learned by study and close observation. Why not visit the State and County fairs and look over the total exhibit; then watch the judging. If necessary, ask the judge questions—why such an animal was awarded the prize. This teaches the breeder how to tell an animal of quality from an ordinary specimen; besides, he learns to know market values, which, of course, greatly assists him in both buying and selling. Following up the different causes of failure in breeding, I find those who have been unsuccessful were either poor judges of live stock or they were poor feeders.

It is always a mistake to keep too much live stock on a farm but never a mistake to keep a few good animals. These same animals should always have the best of care. Every breeder I know is keeping a few animals at a loss and some breeders have no profitable animals at all on their farms and are astonished that they are not making money.

The unprofitable live stock should be sold and profitable ones put in their place.

When engaging in the business of live stock raising, select nothing but good animals that are suitable for not more than two or three purposes. It is important that breeding stock be of rugged constitution and as free from disease as possible. Inbreeding has a tendency to predispose live stock to disease, especially if it is carried too far. When a breeding animal has a constitutional defect it should be mated to one with the same points exceptionally well developed. By giving attention to such a rule, the hereditary tendency or predisposition to either weakness or disease can often be avoided.

The breeder must keep in mind the value of soundness in horses for unsoundness depreciates their market value; therefore, the breeder should possess some knowledge of what constitutes soundness. No stockman can afford to use an unsound stallion for breeding purposes unless the unsoundness was produced by accident or injury for if it is a hereditary ailment it is pretty sure to be transmitted to the produce. Successful breeders do not use crippled, blind, ring-boned, spavined, curbed, badly puffed, crooked-legged or deformed mares for breeding purposes. It is also a mistake to use roarers (whistlers) or broken-winded mares that have heaves for breeding purposes; besides, it seldom pays to breed bad tempered, tricky, vicious mares.

Breeders who aim to produce either a draft, general utility, saddle horse or roadster seem to be more successful than those who try to raise horses for all purposes. No matter what kind you raise, they should be good walkers and have fair all-round action and travel without striking. Never select thin, gaunt, hard keepers for breeding purposes; they are usually unprofitable.

In raising cattle select large, easy keepers for beef and deep milkers for dairy purposes, rather than to try to combine them both in one.

In swine select hogs that are of a moderately large breed but easy keepers, for certain animals are usually fattened at a loss.

In sheep select a flock that are good breeders, good wool producers and those that are easily fattened.

To be successful in raising live stock for profit you must, as I have stated, be a good judge and have a thorough knowledge of feeding.

FEEDING.

Modern feeding principles are the outgrowth of centuries of feeding. The application of science to feeding has resulted in the formation and classification of rules and principles which experience has shown to underlie all feeding operations. Good feeding was just as scientific centuries ago as it is today. The experienced feeder used many of the same foods, got just as good results and fed just as economically, but he did not understand the physiological reasons for his methods and could impart but little of his practical knowledge to his fellow men. With our present knowledge of animal nutrition, food analysis, and the uses of the food elements in the animal body, the novice should be able to gain the practical knowledge in a few years which the old feeders had at the end of a lifetime.

The earliest farmers kept little live stock. Their farms were rough and uncultivated and their animals grazed throughout the year on the native grasses. Feed was not stored for winter use and little or no shelter was provided. Feeding under these conditions was a simple operation. But as grazing land became scarce, and as animals increased in numbers and improved in quality the matter of providing suitable nourishment and utilizing it at a profit became a study. At the present time the need for economy in feeding and the perfection of the product is recognized by all. The feeder of today must feed to produce the greatest number of pounds of flesh, milk or wool at the least possible expenditure of food, time and labor. To do this he must have at least a working knowledge of the fundamental principles of animal nutrition. No hard and fast rules can be laid down for the feeding of all classes of animals under all conditions and surroundings. We can calculate the rations and method of handling which will approximate the results desired. Maximum results can then be obtained by slight deviation from the calculated rules.

Every feeder knows that certain combinations of foods give better results than others. When the old feeders found that their animals were not doing as well as they should, they gave them a little "meal." They did not know why the meal produced the desired results, but experience taught them that it would. Here the chemist and the student of animal nutrition came to the assistance of the feeders. The chemist learned that certain combinations of

chemical elements were present in all food materials. He further learned that these same combinations were found in the various tissues of the animal body. The logical conclusion was that the feeding animal should be furnished with such foods as would supply the necessary elements in the proportions best suited to the animal being fed.

FOOD ANALYSIS.

The agricultural chemist divided the nutritious substances in foods into groups which he called water, ash, protein, carbohydrates, crude fiber, nitrogen free extract and fat. The processes by which he determines the quantities of each of these substances are too complicated to be presented here. We must content ourselves with brief statements of what each consists and something of the function of each in building up the body. All foods, no matter how dry they may appear to be, contain some water or moisture. The ash is the mineral element of the plant and goes to build up the bony tissues of the animal and, to a small degree, the soft tissues. Protein is a group of elements containing nitrogen. It is absolutely essential to the production and repair of blood, muscles, nerves, bones and all the tissues of the body. The greatest amount of protein is required by growing animals but animals of all ages and all kinds require some protein. Carbohydrates form a group of nutrients containing carbon, oxygen and hydrogen, but no nitrogen. They cannot produce or repair tissue, but they do form fat, either in the body or in milk, and they produce energy and heat. Crude fiber is the framework of the cells in plants. Nitrogen free extract is the portion of the feeding stuff remaining when the other substances have been deducted. Fat is the vegetable oil, not unlike that found in the animal body. The fats serve the same purpose as the carbohydrates, except that as a source of energy and heat the fats are about two and one-fourth times as valuable as carbohydrates.

THE ESSENTIAL ELEMENTS OF FOODS.

The protein, carbohydrates, and fats are the essential groups. All three of them are used as sources of heat and energy. Any or all of them may be used for fat production, although the chief sources of animal fat are the vegetable fats and carbohydrates. Protein is the only group that can build up and repair the tissues and maintain the vital organs.

FEEDING STANDARDS.

These facts have been determined for us by the chemists. The students of animal nutrition dealt with the analyses furnished by the chemists. They determined the requirements of the various animals under varying conditions of age and utility. They learned that all rations must contain some protein. They also learned that the addition of carbohydrates and fats reduced the amount of protein required. The question then arose how much of the ration for different purposes should consist of protein, and how much of carbohydrates and fats. This was worked out by extensive investigation with animals of all kinds and under all normal conditions, and given to us in what are known as feeding standards. The standards most used are those established by the German scientists Wolff and Lehmann, and are known as the Wolff-

Lehmann standards, the essential parts of which are as follows, showing amounts of nutrients required per day for 1,000 pounds live weight:

Animals.	DIGESTIBLE NUTRIENTS.					
	Total Dry Matter, Lbs.	Total, Lbs.	Protein, Lbs.	Carbo-hydrates, Lbs.	Fats, Lbs.	Nutritive Ratio.
Growing Cattle						
Beef Breeds						
6 to 12 months, 550 lb.	25	16.4	2.5	13.2	0.7	1: 5.91
12 to 18 months, 750 lb.	24	15.0	2.0	12.2	0.5	1: 6.81
18 to 24 months, 950 lb.	24	14.2	1.8	12.0	0.4	1: 7.17
Dairy Breeds						
6 to 12 months, 500 lb.	27	15.0	2.0	12.5	0.5	1: 6.81
12 to 18 months, 700 lb.	26	14.7	1.8	12.5	0.4	1: 7.44
18 to 24 months, 900 lb.	26	13.8	1.5	12.0	0.3	1: 8.46
Fattening Cattle						
First Period	30	18.0	2.5	15.0	0.5	1: 6.45
Second Period	30	18.2	3.0	14.5	0.7	1: 5.36
Third Period	26	18.4	2.7	15.0	0.7	1: 6.14
Milch Cows						
Giving 11 lbs. milk per day	25	11.9	1.6	10.0	0.3	1: 6.67
Giving 16½ lbs. milk per day	27	13.4	2.0	11.0	0.4	1: 5.95
Giving 22 lbs. milk per day	29	16.0	2.5	13.0	0.5	1: 5.65
Giving 27½ lbs. milk per day	32	17.1	3.3	13.0	0.8	1: 4.48
Horses						
Light Work	20	11.4	1.5	9.5	0.4	1: 6.93
Medium Work	24	13.6	2.0	11.0	0.6	1: 6.18
Heavy Work	26	16.6	2.5	13.3	0.8	1: 6.04
Brood Sows	22	18.4	2.5	15.5	0.4	1: 6.56
Fattening Swine						
First Period	36	30.2	4.5	25.0	0.7	1: 5.90
Second Period	32	28.5	4.0	24.0	0.5	1: 6.28
Third Period	25	21.1	2.7	18.0	0.4	1: 7.00
Sheep						
Coarse Wool	20	11.9	1.2	10.5	0.2	1: 9.13
Thin Wool	23	13.8	1.5	12.0	0.3	1: 8.45
Breeding Ewes	25	18.4	2.9	15.0	0.5	1: 5.56

NUTRITIVE RATIO.

We have seen that protein, carbohydrates and fats are the essential nutrients in a food ration or a single food material. The proportion of protein to the carbohydrates and fats in a food is a quick indication of the value of that food in a ration. This is known as the nutritive ratio. The nutritive ratio is the ratio of the amount of the digestible protein in a given feeding material or a combination of foods to the amount of digestible carbohydrates and fats they contain. Fats yield two and one-fourth times as much heat in the body as carbohydrates. To determine the nutritive ratio of a food or a combination of foods the amount of digestible fat is multiplied by two and one-fourth (2.25), and the product obtained is added to the total quantity of digestible carbohydrates in the given food or combination of foods. This sum divided by the digestible protein gives the nutritive ratio. For example, the tables of food analyses give the digestible ingredients of corn as follows: Protein, 7.14 per cent.; carbohydrates, 66.12 per cent.; fat, 4.97 per cent. To find the nutritive ratio of corn we multiply the fat content by two and one-fourth (4.97×2.25) and get 11.18. Adding this to the carbohydrates (66.12 plus

11.18) we have 77.30. Now, dividing by the protein (77.30 divided by 7.14) we get 10.8, and we express the nutritive ratio of corn as 1 to 10.8 or 1 : 10.8.

TABLE OF FOOD ANALYSES.

Tables of analyses of foods may be obtained from many different sources. The following brief table gives the average digestible ingredients of some of the most common food materials:

Food.	Total Dry Matter.	Protein.	Carbo-hydrates.	Fats.	Nutritive Ratio.
Corn Fodder	57.8	2.34	32.34	1.15	1: 14.9
Corn Silage	25.6	1.21	14.56	0.88	1: 13.7
Timothy	86.8	2.89	43.72	1.43	1: 16.2
Red Clover	84.7	7.38	38.15	1.81	1: 5.7
Alfalfa	91.6	10.58	37.33	1.38	1: 3.8
Corn Meal	85.0	6.26	65.26	3.5	1: 11.7
Ear Corn	89.1	7.14	66.12	4.97	1: 10.8
Oats	89.0	9.25	48.34	4.18	1: 6.2
Wheat Bran	88.5	12.01	41.23	2.87	1: 4.0
Wheat Middlings	84.0	12.79	53.15	3.4	1: 4.8
Cottonseed Meal	91.8	37.01	16.52	12.58	1: 1.2
Oil Meal	90.1	30.59	38.72	2.9	1: 1.5

BALANCED RATIONS.

We have found that certain elements in plants go to build up or repair certain tissues in the animal body. Different classes of animals, and animals under different conditions of growth and age require different feeding. Thus the growing calf requires muscle and bone-making material. The fattening steer requires tissue-building and fat-producing material. The dairy cow requires a food that will keep the vital organs in repair and at the same time produce fat for milk production. Obviously, these different animals require different rations. Each animal requires a ration in which the food elements are supplied in the proportion best suited to meet the needs of its own condition, work or growth. Such a ration is called a balanced ration, *i. e.*, a ration combined of foods mixed in such proportion as to provide the constituents in such relative quantities as experience has shown to give the best results under the given set of conditions.

The feeding standards give us the requirements of the animals. The tables of analyses give us the amounts of digestible nutrients supplied by the various foods. The task of the feeder is to combine these foods in such quantities as will give the animals the required nourishment. In actual feeding, the feeder must also make this selection with a view to economy and the utilization of the foods at hand. To make a practical application, suppose that we are to feed a dairy cow weighing 1,000 pounds and giving 22 pounds of milk per day, and have clover hay, corn silage, corn meal, cottonseed meal and wheat bran to feed. The feeding standards tell us that such a cow should have about 29 pounds of dry matter per day. This dry matter should contain 16 pounds protein, 13 pounds carbohydrates, 0.5 pounds fat and have a nutritive ratio of 1 to 5.65. By reference to the table of analyses and trying out different quantities of foods named, we find that the requirements of the standard are best met by a combination of 4½ lbs. clover, 27 lbs. silage, 5½ lbs. of corn, 6 lbs. of bran and 2 lbs. of cottonseed meal. By ref-

erence to the table of analyses we find that their combination supplies the nutritive elements in the quantities shown in the following table:

Food.	Dry Matter.	Protein.	Carbo- hydrates.	Fats.
4.5 lbs. Clover	3.8	0.33	1.71	.08
27 lbs. Silage	6.9	0.32	3.93	.24
5.5 lbs. Corn	4.7	0.34	3.59	.19
6 lbs. Bran	5.3	0.72	2.47	.17
2 lbs. Cottonseed Meal	1.8	0.74	0.33	.25
Total	22.5	2.45	12.03	0.93
Standard	29.0	2.5	13.	0.5

Applying the rule given for determining the nutritive ratio, we find that the ratio of the above combination is 1 to 6.4. The requirements of the standard are thus met near enough for practical feeding. To meet the needs of each individual, slightly vary the quantities here and watch results. Individuals vary in their needs, and the feeder must study his animals and vary his computed rations accordingly.



A BARNYARD SCENE.
(Photographed at Dr. Fair's "Mentor Stock Farm," Mentor, Ohio especially for this book.)

TRICKS OF HORSE TRADERS.

During my thirty years of experience, I have had occasion to buy and sell several thousand horses and have met with a great many deceptions among unscrupulous horse traders. I have assisted in sending several crooked horse dealers to the state's prison and for the protection of the public, I have deemed it wise to expose a few of their tricks. Beware the Tricks of Horse Swindlers.

1. **Dieting and Doping a Heaver.**—Broken winded horses breathe easier when empty, hence bulky food is kept from them, their food is dampened with lime water and they are doped with such drugs as arsenic, lobelia, chloral hydrate, opium, stramonium or even lard or linseed oil and sometimes bird shot is given them to palliate or hide the symptoms of heaves until the horse is unloaded on the purchaser.

Caution to Buyer.—Let him eat his fill of dry, bulky food or satisfy his thirst with water, then trot him up a hill or on a muddy road or otherwise subject him to violent exercise and he will show the symptoms of heaves.

2. **Plugging a Roarer or Whistler.**—It is a common practice to insert a sponge in one or both nostrils with thread attached, making it possible to clear the nostril after the sale is made. Or, sometimes both ends are cut from a lemon, it is squeezed dry and then inserted in the nostril where it will shrink and be blown out later by the horse. Plugging the nostrils prevents roaring or whistling for the time being. Checking the head high also aids in covering up the symptoms.

Caution to Buyer.—Always examine high up in nostrils when buying a horse. Also give him a brisk gallop to bring out the symptoms.

3. **Blowing Up Old and Sweenied Horses.**—When a dishonest horse trader has a sweenied horse, it is a common practice for him to blow air under the skin over the shrunk parts. He does this by puncturing the skin and blowing air under it through a tube or goose quill. This gives the wasted parts the appearance of being normal. Sometimes this is done with old horses to give them a younger appearance.

Caution to Buyer.—By applying pressure to the parts with the hand a crackling noise is produced which is quite unnatural, therefore by close observation this trick is easily discovered.

4. **Paralyzing a Switcher.**—Unscrupulous dealers, to stop switching and "line grabbing" until after a sale is made, hang a four or five pound weight to the tail for several hours or tie the tail up over the back, keeping it in a fixed position until the tail is temporarily paralyzed. This prevents switching while the partial paralysis lasts.

Caution to Buyer.—It is always suspicious when a horse hangs the tail in a limp or pendulous way and never moves or switches it.

5. **Gingering.**—Crooked horse traders frequently insert a piece of ginger root in the lower bowel or moisten the anus with an irritating medicine of some kind to make him carry a high tail and act more lively when in the show ring or on the road.

Caution to Buyer.—Be suspicious when a horse carries his tail too high.

6. Hiding Lameness.—Horse swindlers have learned to handle the hypodermic syringe and inject cocaine over the nerves on each side of a lame leg. This prevents pain and makes the horse go sound until after a sale or trade is consummated.

Frequently they have a section of the nerve taken out and this permanently relieves the animal of pain below the fetlock. Sometimes the nerve is severed or divided above the knee or hock and this relieves lameness below.

Often the shoe is pulled off the foot of lame leg to deceive the buyer into believing that the lameness was caused by casting a shoe and is only temporary.

Caution to Buyer.—Watch closely for scars or needle punctures, especially above and below the fetlock. Be suspicious of a lame horse that has cast a shoe.

7. Hiding Spavins, Ringbones and Sidebones.—Unscrupulous horse dealers frequently make wounds or skin abrasions over a spavin, ringbone or sidebone, or they bruise the parts to produce local swelling. This sometimes misleads the buyer into believing that the horse has met with a recent and trivial injury from which he will soon recover.

Caution to Buyer.—Hesitate to buy a horse when suffering from a wound or skin abrasion in the localities where these blemishes are found.

8. Putting Harness Galls on a Balking Horse.—Gypsies and disreputable horse traders very often burn sores on the shoulders and disarrange the hair on top of the horse's neck as though caused by a collar. They also chafe the horse's sides as though done by the harness. This is done to make the innocent purchaser believe that the horse received these scars while doing hard work in the harness while it is possible that the horse will not pull a pound in the harness.

Caution to Buyer.—Insist on seeing the horse work and pull a heavy load.

9. "Doctoring" a Cribber.—To conceal the fact that a horse is a cribber, horse traders sometimes saw between the incisor teeth or drive small wedges between them or make the mouth sore by cutting or burning the gums. The horse is not likely to crib while his mouth is very sore.

Caution to Buyer.—Examine the mouth and incisor teeth very carefully before buying.

10. Winding a Horse.—A common trick of horse traders when showing a broken winded horse is to gallop past the buyer, then go slow and consume as much time as possible in turning. This allows the horse to catch his wind and not show his broken wind when galloping past the buyer. Sometimes the horse is made to appear as though trying to run away and thus requiring to be held in. The head is also checked high and the nose kept poked out as much as possible.

Caution to Buyer.—Insist on the horse being galloped fast for a considerable distance and the nose pulled well into the breast.

11. "Bishoping."—For nearly a hundred years gypsies and dishonest horse traders have been known to "Bishop" the teeth, thus making an old horse appear young to the casual observer. The operation consists in cutting cups in the table surface and staining them with nitrate of silver, thereby giving the old tooth the appearance of a much younger one. Special tools are made for this purpose and it is astonishing how expert some of the horse traders become in this art.

Caution to Buyer.—An old horse seldom has the appearance of a young one, and the teeth have an entirely different appearance. The difference will readily be noticed upon comparison.

12. **The "Stool-Pigeon Swindler."**—In all large cities, it is common practice with many disreputable horse dealers to advertise a horse as being the property of Mrs. Blank, who is represented to the customer as a widow. She, of course, is always dressed in black and sheds tears with ease while in reality she is the "stool-pigeon" or accomplice of the swindler. Various misrepresentations are made and after the swindle is discovered by the purchaser he is either unable to find the sellers or he finds them to be irresponsible parties from whom no damages can be collected. I have known operators of this kind to rent as many as six or eight barns in various parts of the city and advertise a horse first at one and then at another.

Caution to Buyer.—Beware of "stool-pigeons" and widows (when buying horses) and have a doubt in your mind when answering advertisements of this kind. Don't be influenced by the horse stories of strangers but buy the horse on its merits.

13. **Matching a Fractious Horse with a Lazy One.**—To deceive innocent purchasers, dishonest dealers sometimes dope an unmanageable horse with drugs to make him quiet and gentle. Or, sometimes the horse is walked or driven, before shown for sale, until he is nearly exhausted. These things are also done to match a fractious horse with a quiet, lazy one and make them travel well together.

Caution to Buyer.—In matching horses never decide too quickly and especially if the animal impresses you as being vicious or excitable for he may have been "fixed" to deceive you.

14. **The Straw and Stringhalt Trick.**—When horses show stringhalt the trader very often accounts for it by saying it is a habit contracted on account of being bedded deeply in rye straw, thus obliging the horse to lift his feet high while walking about in the box stall.

Caution to Buyer.—Don't accept an excuse or apology for an ailment of this kind. The excuse is generally made of "straw."

15. **The Dark Trick.**—Horse traders frequently desire to dispose of horses that are suffering from moon blindness (periodic ophthalmia) and this is an incurable eye defect which is much worse at some times than others. These horses are usually disposed of in the evening or at the time when they show the defect the least.

Caution to Buyer.—Never buy a horse in the dark. Notice that both eyes are the same size, and that the lids are normal and the eyeballs transparent and not of a bluish color.

16. **Stuffing the Ears.**—The ears of nervous and excitable horses are often stuffed with cotton, wool or oakum to render the animal deaf and thus prevent his becoming frightened by noise.

Caution to Buyer.—Always examine both ears closely.

17. **The Meaning of Many Scars.**—Scars are frequently the result of run-aways or falling during a fit. The animal may be unmanageable or subject to blind staggers or the scars may have been produced by injuries received while rolling and tumbling with frequent attacks of colic.

Caution to Buyer.—Beware of a horse with many scars unless you know what caused them.

GLOSSARY.

DICTIONARY OF MEDICAL AND VETERINARY TERMS.

Abate—To diminish, to lessen.

Abdomen—The belly; that part of the body containing the stomach and intestines.

Abdominal—Pertaining to the abdomen.

Ablution—Washing; cleansing with water.

Abnormal—Unnatural, irregular.

Abortion—Expulsion of fetus or child before it can sustain life.

Abrasion—A wound caused by rubbing or bruising the skin.

Abscess—A collection of pus in some tissue or organ of the body.

Absorbent—Anything which sucks up substances; a medicine which takes up acidity from the bowels and stomach.

Absorption—The process or act of absorbing or sucking in; condition of being absorbed or sucked in.

Accoucheur—A man who attends mothers during childbirth.

Acetabulum—The cup or socket that receives the head of the thigh bone.

Acholia—Not a sufficiency of bile.

Acid—Sour, pungent, sharp or biting to the taste.

Acidity—Sourness.

Acme—The top; the highest point.

Acrid—Pungent, bitter, irritating.

Actual Caутery—Searing or burning with a hot iron; used in surgery.

Acupuncture—Pricking with needles; one of the surgical operations.

Acute—Severe, sharp; the reverse of chronic; coming quickly to a crisis.

Adhesion—Act of sticking; union or sticking of surfaces.

Adhesive—Sticky, uniting, tending to adhere.

Adhesive Plaster—Sticking plaster.

Adipose—Fatty.

Adjuvant—A medicine put into a prescription to assist the action of the other medicines.

Adult—A person or animal that has attained full growth.

Adventitious—Accidental; acquired, as diseases.

Affection—Disease, sickness, disorder, malady.

Affusion—The action of pouring a liquid upon any body.

Albumen—The white of an egg; an element found in both vegetable and animal substances.

Albuminoid—Of the nature of albumen.

Albuminose—A substance produced in the stomach during the act of digestion.

Aliment—Any kind of food or nourishment.

Alimentary Canal—The canal extending from the mouth to the anus and including the gullet, stomach and intestines.

Alkali—A substance like soda or potash that neutralizes or destroys acids.



DR. FAIR'S BOYHOOD HOME IN CANADA.
(Photographed especially for this book.)



DR. FAIR'S EUCLID AVENUE HOME IN CLEVELAND, OHIO.
(Photographed especially for this book.)

- Alterative**—A medicine that gradually induces a change or restores healthy action.
- Alveolar Processes**—That part of the jaw which contains the sockets of the teeth.
- Alveole**—A tooth socket.
- Alvine**—Relating to the intestines.
- Amaurosis**—A loss of sight produced by various causes.
- Amenorrhea**—Absence, retention, or suppression of the menses.
- Amnion**—A membrane enclosing the fetus and the liquid.
- Amniotic Liquid**—The fluid surrounding the fetus.
- Amputation**—The act of cutting off a part of the body, as a limb.
- Amylaceous**—Containing starch.
- Amyloids**—Foods such as sugar and starch which are composed of carbon and hydrogen.
- Analysis**—The resolving of a thing into its component parts.
- Anastomosis**—Communication between two vessels; applied to arteries and veins.
- Anasarca**—General dropsy; dropsy of the whole body.
- Anatomy**—The science or study of the structure of the body.
- Anemia or Anæmia**—A condition in which the blood is lacking in quantity and quality.
- Anesthesia**—Numbness or paralysis of sensation.
- Anesthetic**—A medicine that takes away sensation or produces insensibility to pain.
- Aneurism**—A soft tumor caused by rupturing the coats of an artery.
- Angina Pectoris**—Breast pang; neuralgia of the heart.
- Animalcule**—An animal so small as to be invisible to the naked eye.
- Anodyne**—A medicine which relieves pain and induces sleep.
- Anomaly**—Irregularity; deviation from the general rule.
- Antacid**—A substance that counteracts acids; alkalies are examples.
- Antaphrodisiac**—A medicine which tends to cool the animal passions.
- Anthelmintic**—A medicine that destroys worms or expels them from the stomach and bowels.
- Anthrax**—A reddish or purplish tumor occurring in the neck.
- Antibilious**—That which counteracts biliousness.
- Antidote**—A remedy which counteracts the effects of poisons or disease.
- Antidysenteric**—A remedy for dysentery.
- Anti-emetic**—That which will check vomiting.
- Antilithic**—A medicine which will prevent or remove gravel or urinary calculi.
- Antimorbific**—Anything which will prevent or destroy disease.
- Antiperiodic**—A remedy for periodical diseases such as ague or intermittent fever.
- Antiscorbutic**—A remedy for scurvy; a blood purifier.
- Antiseptic**—That which prevents or resists putrefaction.
- Antispasmodic**—A remedy which relieves cramps, spasms or convulsions.
- Antisymphilitic**—A remedy for syphilis.
- Anus**—The outer opening of the rectum or lower bowel.
- Aorta**—The large artery which carries the blood to all parts of the body except the lungs.
- Apathy**—Insensibility to pain.
- Aperient**—A mild laxative; a medicine which moves the bowels gently.

- Aphthous**—Pertaining to sore mouth.
Apnea—Absence of breathing.
Apoplexy—Rush of blood to an organ.
Apparatus—A set of implements or organs for some special use.
Appetite—Desire for food or drink.
Aqueous—Watery.
Arachnoid—A thin membrane covering the brain.
Areola—The colored circle which surrounds the nipples or surrounds sores.
Areolar Tissue—A network of delicate fibres spread over the body.
Aroma—An intense or agreeable perfume or odor.
Aromatic—Fragrant or spicy drugs.
Artery—A vessel which carries the blood from the heart to the organs.
Arthritic—Relating to inflammation of the joints.
Arthrodia—A joint movable in all directions.
Articulate—To join together.
Articulated—Jointed; having joints.
Articulation—A union, as of the bones with each other at the joints.
Ascarides—Pin worms found in the lower part of the bowels.
Ascites—Dropsy of the abdomen.
Asphyxia—Apparent death as from drowning or smothering.
Aspirate—To breathe roughly.
Assimilation—The process of changing the nutriment of the food into tissue.
Asthenia—Weakness.
Asthenic—Debilitated.
Asthmatic—Subject to asthma.
Astringent—A medicine which contracts or puckers the flesh.
Atony—Defect of muscular power; debility.
Atrophy—A wasting of flesh and strength.
Attenuants—Medicines which reduce the weight of the body.
Attenuate—To make thin.
Auditory—Relating to hearing.
Auricle—A cavity of the heart; also, the outer ear.
Auscultation—The art of diagnosing or determining a disease by listening to the sounds of the heart, lungs, etc.
Autopsy—Examination of a corpse.
Axilla—The armpit.
Axillary—Pertaining to the armpit.
- Balsamic**—A medicine which has healing properties.
Benign—Kind, gentle, mild.
Bifurcation—Branching into two parts.
Bile—Gall. A bitter and yellowish or greenish fluid secreted by the liver and which aids digestion.
Biliary—Belonging to or containing bile.
Bilious—Having too much bile.
Biology—The science of life.
Bisect—To divide into two equal parts.
Bistoury—A small cutting knife.
Blister—A thin bladder on the skin and containing a watery fluid.
Blood Serum—The yellow fluid which remains after the blood has coagulated.
Bolus—A large pill.
Bougie—A tapering body inserted in a passage to keep it open or to enlarge it.

Bronchia—A branch of the windpipe.

Bronchial—Belonging to the divisions of the windpipe.

Bronchitis—Inflammation of the bronchial tubes.

Cachexia—A bad condition of the system.

Cæcum—The blind gut.

Calcareous—Containing lime.

Calcification—The process of changing into a calcareous substance such as chalk.

Calculus—Stone or gravel found in the bladder or kidneys.

Calisthenics—Light gymnastics.

Callus—A hard deposit.

Callous—Hard or firm.

Caloric—Heat.

Canthrus—The corner of the eye.

Capillary—Fine, hair-like; a very small blood vessel.

Capsicum—Cayenne pepper.

Capsule—A gelatinous case for enclosing a dose of unpleasant medicine; also, a membranous bag enclosing an organ.

Carbonic Acid Gas—A gas containing one part of carbon and two parts of oxygen.

Cardiac—Relating to the heart.

Caries—Ulceration of a bone.

Carminative—A medicine which expels wind or gas from the stomach and bowels.

Carotids—The large arteries of the neck which convey blood to the heart.

Carpus—The wrist.

Cartilage—Gristle.

Casein—That part of milk that contains nitrogen.

Castrate—To remove the testicles or ovaries.

Catalysis—Paralysis.

Catamenia—The monthly discharges.

Cataplasm—A poultice.

Catarrh—Chronic inflammation of a mucous membrane.

Cathartic—A medicine which opens the bowels freely; a purgative.

Catheter—A hollow tube used for drawing off the urine.

Caustic—A substance which burns or destroys living tissues.

Cauterize—To apply caustic; to burn living tissue.

Cautery—A searing or burning of any part of the body.

Cell—A small elementary form in vegetable or animal tissue.

Cellular—Composed of cells.

Cephalic—Pertaining to the head.

Cerebellum—The lower and back part of the brain; the small brain.

Cerebral—Pertaining to the brain.

Cerebrum—The upper and front part of the brain; the large brain.

Cerebro-Spinal—Pertaining to the spinal cord and brain.

Cerumen—A wax-like secretion; the wax of the ear.

Cervical—Pertaining to the neck.

Cervix—The neck; the neck of the womb.

Cesspool—A privy.

Chalybeate—Containing iron in solution.

- Chancre**—A venereal sore; the sore of syphilis.
Cholagogue—A medicine which causes an increased flow of bile.
Choleric—Pertaining to bile; irritable.
Chordee—A painful drawing of the chords of the penis occurring in gonorrhea.
Chronic—Of long duration and becoming a fixed condition of the system.
Chyle—The milky fluid formed from food by digestion.
Chyme—The pulp formed from food after it has mixed with the gastric juice.
Cicatrizize—To heal or induce the formation of a scar.
Cilia—Small hairs.
Circulation—The motion of the blood which is forced through the body by the heart.
Clavicle—The collar bone.
Climacteric—The climacteric periods are puberty and the change of life.
Clinical—Pertaining to the bed.
Clonic—Convulsive, irregular.
Clyster—An enema or liquid injection into the bowels.
Coagulate—To thicken or harden; to change from a liquid to a solid state.
Coalesce—To unite; to adhere; to grow together.
Coition—Sexual intercourse.
Coffin-Bone—The lower bone of an animal's leg encased in the hoof.
Colic—A painful disorder of the bowels.
Collapse—A sudden and complete breaking down; a sudden failure or prostration of the vital functions.
Colliquative—Excessive sweats and discharges which weaken the body.
Collyrium—A medicine applied to the eye.
Colon—A portion of the large intestines.
Coma—Stupor; a condition of profound and unconscious sleep.
Comatose—In a state of coma or stupor.
Combustion—Burning.
Compress—A bandage made with several folds of cloth.
Conception—The beginning of pregnancy.
Concretion—A hardened mass made up of gathered particles.
Concussion—A violent shock.
Condiment—An article used to make food more savory or palatable.
Condyle—A prominence of the joints.
Confluent—Running together.
Congenital—Born with; belonging to from birth.
Congestion—An accumulation of blood in a part.
Conjunctiva—The mucous membrane which covers the eye and lines the eyelid.
Conjunctivitis—An inflammation of the conjunctiva, or membrane of the eye.
Constipation—Costiveness.
Constriction—A narrowing or contraction.
Contagion—A disease which may be communicated by contact.
Contagious—Catching; may be transmitted by contact.
Contamination—Pollution.
Contusion—A bruise.
Convalescence—Period of getting well; improvement after sickness.
Convolute—Curved or rolled together.
Convulsions—Violent and involuntary movements of the body.
Copulation—Sexual intercourse.

- Cordial**—A stimulating medicine or one that raises the spirits.
Coriaceous—Tough and elastic; leather-like.
Corium—A layer of skin.
Cornea—A transparent covering in the front of the eye.
Corrective—A substance put into medicine to modify its action.
Corroborant—A tonic or strengthening medicine.
Corrosive—A substance that consumes or eats away living tissue.
Cosmetic—A substance used to beautify the skin.
Costiveness—Constipation.
Counter-irritant—A medicine which relieves irritation in one part of the body by increasing it in another part.
Cranium—The skull.
Cranial—Pertaining to the skull.
Crassamentum—The thick part of the blood.
Crepitas—Abrupt, harsh sounds.
Crisis—The turning point of a disease.
Crucial—Like a cross.
Crural—Belonging to the leg.
Crustaceous—Having a crust-like shell.
Cul-de-sac—A passage closed at one end.
Cutaneous—Pertaining to the skin.
Cuticle—The outer or scarf skin.
Cyst—A sac or pouch.
Cystitis—Inflammation of the bladder.
- Debility**—Weakness.
Débris—Broken or detached fragments.
Decarbonize—To free from carbon.
Decoction—Medicine that is prepared by boiling some substance in water.
Decomposition—Decay.
Defecation—The passing or voiding of excrement from the body.
Degenerate—To grow worse or inferior.
Deglutition—The act of swallowing.
Dejection—Fecal matter discharged from the bowels.
Deleterious—Poisonous, destructive.
Deliquium—The act of fainting.
Delirium—Temporary loss of mind; wildness.
Demulcent—A mucilaginous medicine which removes the pain of diseased or wounded parts.
Dentition—Teething.
Dentifrice—A preparation for cleaning the teeth.
Deobstruent—A mild laxative.
Deodorizer—A substance that destroys bad odors.
Depletion—The act of emptying.
Depravation—Corruption.
Depuration—Cleansing from impurities.
Dermal—Pertaining to the skin.
Dermatologist—A specialist in skin diseases.
Desiccate—To become dry.
Desquamation—Scaling.
Detergent—A cleansing medicine.

- Determination**—Strong direction toward some point.
- Diabetes**—A disease in which there is an unusually large flow of urine.
- Diagnosis**—The act of determining diseases by the symptoms.
- Diaphoretic**—A medicine which increases sweating.
- Diaphragm**—The muscular partition between the cavity of the chest and the cavity of the abdomen.
- Diathesis**—Disposition of the system; tendency of the body toward any disease; peculiarity of constitution.
- Dietetic**—Relating to diet.
- Dilatation**—Enlargement; the act of dilating.
- Diluent**—A liquid used to dilute or weaken a medicine; a medicine which thins the blood.
- Diluting**—Weakening.
- Discutient**—A medicine for driving away or scattering swellings and tumors.
- Disinfect**—To purify or free from infectious matter.
- Disinfectant**—A substance which destroys germs; an article which purifies infected places.
- Dislocation**—Throwing out of natural position; a bone out of its socket.
- Distention**—An expanding and stretching.
- Distillation**—The process of changing liquor to vapor and then to its first form.
- Diuresis**—Excretion of the urine.
- Diuretic**—A medicine that increases the flow of urine.
- Domestic**—Belonging to the home.
- Dorsal**—Pertaining to the back.
- Douche**—Dashes or injections of water.
- Drastic**—A medicine which acts powerfully.
- Dropsy**—An unnatural accumulation of fluid in the body.
- Duct**—A vessel or tube for conveying fluid.
- Duodenum**—The first portion of the small intestines.
- Dura Mater**—A thick membrane lining the cavity of the skull.
- Dyscrasia**—A bad habit, generally producing a diseased condition of the system.
- Dyspepsia**—Difficult of digestion.
- Dysphagia**—Difficulty of swallowing.
- Dyspnea or Dyspnœa**—Difficulty of breathing.
- Dysuria**—Difficulty and pain in passing urine.
- Ebullition**—The motion of liquid when it is giving off bubbles of vapor.
- Ecchymoma**—An effusion of blood into the cellular tissue under the skin.
- Ecchymosis**—A black or yellowish spot produced by effused blood.
- Ecraseur**—An instrument used for castration.
- Ecstasy**—Great excitement; loss of mental control.
- Eczematous**—Of the nature of eczema.
- Edema**—A swelling filled with fluid.
- Effervesce**—To foam, as soda water.
- Effete**—Exhausted; worn out.
- Efflorescence**—Redness of the surface as in measles.
- Effluvium**—An unpleasant odor or exhalation from decaying matter.
- Effusion**—The pouring out of fluids from their natural position into the tissues or cavities of the body.

Elasticity—The property of matter or a body by which it tends to resume its original form after the removal of external pressure or force.

Electrization—Medical use of electricity.

Electuary—A medicine prepared with honey or syrup.

Eliminate—To throw out; to expel; to discharge.

Emaciate—To grow thin; to waste away.

Embryo—The germ of an animal at the beginning of its development in the womb.

Emesis—Vomiting.

Emetic—A medicine which produces vomiting.

Emmenagogue—A medicine which will promote the menstrual flow.

Emollient—A softening or relaxing medicine like flaxseed.

Emphysema—A swelling caused by air in the tissues.

Empirical—Wanting in science; depending upon experiment.

Empyema—A collection of pus, blood, etc.

Emulsion—A milky mixture containing water, oil and mucilage.

Enamel—The outer covering of the teeth.

Encephalon—The whole brain.

Encysted—Enclosed in a sac or cyst.

Endemic—A disease peculiar to a certain people or locality.

Endermically—Through the skin.

Endocarditis—Inflammation of the lining membrane of the heart.

Endocardium—The lining membrane of the heart.

Enema—An injection into the rectum.

Enervation—A reduction of strength.

Engorgement—Over-fullness or obstruction of a vessel.

Enteric—Pertaining to the intestines.

Enteritis—Inflammation of the intestines.

Ephemera—A fever lasting but a day.

Ephemeral—Of short duration.

Epidemic—A disease attacking a number of persons or animals in a locality at the same time.

Epidermis—The cuticle; the outer skin.

Epigastrium—The upper part of the abdomen.

Epiglottis—A cap over the windpipe which prevents the entrance of food or drink.

Epileptic—Subject to epilepsy or convulsions.

Epiphora—A surplus secretion of tears.

Epispastic—An external application to the skin.

Epistaxis—Nose bleed.

Epithelium—The layer of cells which covers many of the membranes of the body.

Erethism—Morbid energetic action of irritability.

Erosion—An eating or wearing away.

Errhine—A medicine to promote the discharge from the nose.

Eructation—Belching.

Eruption—A breaking out; a rash on the skin.

Erysipelatous—Pertaining to erysipelas.

Erythematic—Causing a morbid redness of the skin.

Eschar—The scurf; the dead part which falls from the surface.

Escharotic—An application which destroys the flesh.

- Esophagus**—The gullet; the tube which conveys food to the stomach.
- Etiology**—That branch of medicine which treats of the cause of disease.
- Eustachian Tube**—A small tube leading from the throat to the ear.
- Evacuant**—Cathartic.
- Evacuation**—Movement of the bowels or passing of urine.
- Exacerbation**—Violent increase in a disease.
- Exanthema**—An eruptive disease like scarlet fever or small-pox.
- Excision**—The act of cutting out or off.
- Excitant**—A stimulant; a medicine which arouses vital activity.
- Excoriate**—To wear off the skin in any way.
- Excrement**—Refuse matter; matter ejected from the bowels.
- Excrescence**—An unnatural growth like a wart or bunion.
- Excretion**—Excrement; that which is thrown off.
- Exfoliate**—Peeling or scaling off.
- Exhalation**—A breathing out or throwing out of vapor, gas, air, etc.; also that which is thus thrown off.
- Exostosis**—An unnatural growth from a bone.
- Expectorant**—A medicine which promotes the discharge from the lungs or throat.
- Expectorate**—To spit or cough up mucus or saliva.
- Expiration**—A breathing out.
- Extraneous**—Foreign; from without.
- Extravasation**—The act of forcing a fluid out of its proper channels; a blood blister.
- Extremities**—The arms and legs.
- Exudation**—A discharge, as of sweat; sweating.
- Exude**—To sweat; to ooze out.
- Facial**—Relating to the face.
- Fæcal or Fecal**—Relating to the feces.
- Fæces or Feces**—The discharges of the bowels; the excrement.
- Fallopian Tubes**—The canals through which the ovum passes from the ovaries to the womb.
- Farinaceous**—Containing starch.
- Farcy**—Acute glanders.
- Fascia**—The layer of connective tissue covering all muscles.
- Fauces**—The pharynx and back part of mouth.
- Feces**—(See fæces).
- Febrifuge**—A medicine which reduces fever.
- Febrile**—Pertaining to fever; feverish.
- Feculent**—Foul from dregs or sediment.
- Fecundation**—The uniting of the ovum with the male germ.
- Femur**—The thigh bone.
- Fermented**—Changed by decomposition.
- Ferruginous**—Containing or made of iron.
- Fetid**—Having a disagreeable or offensive odor.
- Fetor**—An offensive smell.
- Fetus or Fœtus**—The unborn child or animal in the womb.
- Fibrine**—Animal matter found in blood.
- Fibrous**—Composed of small fibres or threads.
- Fibula**—The smaller of the bones between the ankle and knee.

- Filter**—To strain through paper or other substance made for that purpose.
Filtration—Straining; the act of passing through a filter.
Fistula—An ulcer; a deep narrow abscess.
Fistulous—Hollow like a tube.
Flaccid—Soft, flabby, relaxed.
Flatulency—The state of being inflated with gas; having wind on the stomach.
Flatulent—Generating wind in the stomach and intestines.
Flatus—Wind generated in the stomach.
Flexible—Capable of being bent.
Flexor—A bender; as a muscle that bends a limb or other part.
Flooding—Uterine hemorrhage.
Flush—A flow of blood to the face; to cleanse by a sudden wash of water.
Flux—Flow; diarrhea; an unusual discharge from the bowels.
Fœtus or Fetus—The unborn child or animal in the womb.
Follicle—A gland; a small depression in the skin.
Fomentation—External application by means of cloths dipped in water or medicine.
Foramen—A perforation; a small opening.
Forceps—An instrument having two blades and used for grasping bodies firmly.
Formication—A creeping sensation.
Formula—A medical prescription.
Fracture—A broken bone.
Friction—Irritation by rubbing.
Fumigate—To apply vapor or smoke.
Function—A particular duty or use.
Fundament—The anus; the outer opening of the bowel.
Fundus—The base or bottom of any hollow organ.
Fungus—A spongy growth, as proud flesh.

Galvanism—Current electricity.
Galvanization—The application of the galvanic current.
Ganglion—A knot or lump of tendons; an enlargement of nerves.
Gangrene—Death or mortification of a part of the body.
Gargle—A wash for the mouth or throat.
Gastric—Pertaining to the stomach.
Gastric Juice—A juice secreted by the stomach.
Gastritis—Inflammation of the stomach.
Gelatinous—Jelly-like.
Generation—Reproduction; the process or act of begetting.
Genitals—The sexual or reproductive organs.
Gestation—The period of pregnancy.
Gland—A cell or collection of cells the function of which is to secrete some fluid.
Glandular—Gland-like; pertaining to the glands.
Glans—The head of the penis.
Glottis—The upper part of the windpipe.
Gluteus—A name applied to the muscles of the hip.
Glutinous—Containing or resembling glue.
Granular—Made up of or resembling grains.
Granulation—Healing of a wound or ulcer with healthy matter.

Granules—Small grains.

Groin—The arch; the oblique depression between abdomen and thigh.

Grumous—Clotted, thick.

Guttural—Pertaining to the throat.

Habit—A peculiar temperament or state of the body; a predisposition to do a particular thing.

Habitat—The usual abode of an animal.

Hæmal—Relating to blood.

Hæmatein—The coloring matter in the blood.

Hair-bulb—The enlargement at the root of a hair.

Hallucination—A disorder of the mind in which the patient imagines he sees things which do not exist.

Haunch—The upper part of the thigh; the hip.

Hectic—A remitting fever or fever of advanced disease.

Hemalemes—Hemorrhage from the stomach.

Hematosiis—A morbid or excessive quantity of blood.

Hematura—Hemorrhage from the bladder.

Hemiplegia—Paralysis affecting but one side of the body.

Hemoptysis—A spitting of blood.

Hemorrhage—Bleeding; a discharge of blood.

Hemorrhoids—Piles; bleeding piles.

Hemorrhoidal Veins—The veins about the rectum which cause piles when they become enlarged.

Hepatic—Pertaining to the liver.

Herbaceous—Pertaining to herbs as an animal which eats herbs.

Hereditary—Transmitted from parent to offspring.

Hernia—A rupture or protrusion of the bowels.

Herpes—A skin disease.

Humors—The fluids of the body excepting the blood.

Humerus—The upper bone of the arm or foreleg.

Hydragogue—A medicine which produces a watery discharge from the bowels.

Hydrargyrum—Quicksilver; calomel.

Hydrogen—An elementary principle forming a ninth part of water.

Hydrophobia—Rabies, madness.

Hydrothorax—Dropsy of the chest.

Hygiene—That part of science which treats of the preservation of health.

Hymen—The membrane covering the mouth of the vagina.

Hyperæmia—A congestion of blood in an organ or part of the body.

Hyperesthesia—A state of exalted sensibility of a part of the body.

Hypertrophy—Enlargement; excessive development.

Hypnotic—Possessing the quality of producing sleep.

Hypochondriacal—Low-spirited, melancholy.

Hypodermic—Under the skin.

Hypogastrium—The lower part of the abdomen.

Hysterical—Nervous; subject to hysteria.

Ichor—A watery discharge as from ulcers.

Idiopathy—A primary disease which does not depend on any other disease.

Idiosyncrasy—A peculiarity of temperament or constitution.

Ileous—Colic of the small intestines.

- ileum**—A portion of the small intestine.
Iliac Region—Region of the small intestines.
Illuminant—That which affords light.
Imbecility—Weakness of the mind.
Immerse—To put under water.
Imperforate—Without a natural opening.
Impregnation—The uniting of the female with the male germ-cell.
Impotence—Want of power.
Impurity—That which is foul and impure.
Inanition—Emptiness, weakness, exhaustion.
Incision—The act of cutting.
Incisor—A front tooth.
Incontinence—Inability to hold; want of self-restraint.
Incorporate—To mix.
Incubation—The maturing or development of a contagious disease; hatching.
Incubus—The nightmare.
Indigenous—Native.
Indigestible—Not easily digested.
Indisposition—A poor state of health.
Induration—The act of hardening.
Infection—The communication of disease.
Infectious—Contagious.
Inflammation—A redness or swelling of any part; attended with heat.
Inflate—To swell up.
Infusion—A medicine prepared by steeping, not boiling; a tea.
Ingestion—Forcing into the stomach.
Inguinal—Pertaining to the groin.
Inhalation—The act of breathing in or drawing into the lungs.
Inhale—To draw into the lungs; to breathe in.
Injection—A preparation thrown into the body by the means of a syringe.
Inoculation—Communication of a disease to a healthy person or animal by inserting contagious matter under the skin.
Inorganic—Without the organs necessary for life as a mineral.
Insalivation—The mixing of the food with saliva when eating.
Insemination—The emission of sperm in sexual intercourse.
Interstice—A small space between the particles of a body.
Insomnia—Sleeplessness.
Inspiration—Breathing in.
Inspissation—The act of thickening by boiling or evaporation.
Integument—The skin; a covering.
Intercostal—Between the ribs.
Intermittent—Ceasing at intervals.
Intestines—The bowels.
Intra—Within.
Intussusception—Telescoping; the slipping of one tube into another.
Iris—The curtain which gives the eye its color.
Irrigate—To wash out.
Jejunum—The middle division of the small intestine.
Jugular—Applied to the veins of the throat.

Labia—Lips.

Lacerated—Torn.

Lachrymal—Pertaining to tears.

Lactation—The act of milking or sucking; nursing.

Lacteals—Vessels conveying milk or chyle.

Lamella—A thin plate or scale.

Laminal—Having the form of a thin plate or scale.

Lancinating—Piercing as with a sharp instrument; often applied to piercing pains.

Languor—Lassitude, feebleness.

Larva—An insect in its early form after leaving the egg.

Laryngitis—Inflammation of the larynx.

Laryngoscope—An instrument for viewing the larynx.

Laryngotomy—The operation of cutting the larynx.

Larynx—The upper part of the windpipe.

Lateral—Sidewise.

Laxative—A medicine that loosens the bowels; a mild cathartic.

Lesion—A hurt or injury.

Lethargy—Drowsiness, heaviness.

Leucorrhea—A discharge from the womb.

Lienteric—Pertaining to a certain form of diarrhea.

Ligament—The strong structure which binds the bones together.

Ligation—The art of using a ligature.

Ligature—A cord for tying blood-vessels.

Linctus—A soothing cough remedy.

Liniment—A fluid wash for bruises, etc.

Lithontripic—A medicine to dissolve gravel or stone in the bladder.

Lithotomy—The operation of cutting for the purpose of removing stone from the bladder.

Lithotriety—The crushing operation for stone in the bladder.

Livid—Black and blue.

Lobe—A round projecting part of an organ.

Lochia—The evacuations from the womb and vagina after childbirth.

Loin—The part of the back wall of the abdomen between the pelvis and chest.

Lumbago—Rheumatic pains in the small of the back and loins.

Lumbar—Pertaining to the loins.

Lymph—A colorless fluid in the lymphatic vessels.

Lymphatic—Absorbents; vein-like vessels pervading the body.

Macerate—To steep almost to solution.

Macular—Blemishes; colored spots.

Malady—Disease.

Malar—Pertaining to the cheek bone.

Malaria—Bad air causing disease.

Malarial—Pertaining to malaria.

Malformation—Irregular in formation or structure.

Malignant—Dangerous; liable to cause death.

Malleolus—A projection of the ankle bone.

Mamma—The breast of the female.

Mammalia—Animals that suckle their young.

Mania—Violent derangement of the mind.

- Manipulation**—Examination by the hand.
Marrow—A soft substance in the bones.
Massage—Rubbing, kneading.
Mastication—The act of chewing.
Masturbation—Self-abuse.
Materia Medica—The science of medicine.
Matrix—The womb.
Maturation—The formation of matter or pus.
Maxilla—The jaw-bone.
Meatus—A passage or canal.
Meconium—The first evacuations of an infant.
Mediastinum—The partition formed by the meeting of the pleura, dividing the chest into two lateral parts.
Medula Oblongata—A mass of nerves at the lower part of the brain.
Membrane—A thin sheet-like tissue.
Meninges—The three membranes that envelope the brain and spinal cord.
Menses—The monthly flow or sickness of females.
Menstrual—Pertaining to the menses.
Menstruation—The monthly discharges from the womb.
Menstruum—A liquid used to dissolve solid substances.
Mephitic—Noxious, suffocating.
Mesentery—The membrane which attaches the intestines to the spine.
Metacarpus—The part of the hand between the wrist and fingers.
Metastasis—A transference of disease from one place to another.
Metatarsus—The portion of the foot between the ankle and toes.
Miasma, Miasmata—Malaria; exhalations from swamps and decaying matter.
Miasm—Infection floating in the air.
Micturition—The act of making water.
Midwife—A woman who attends another at childbirth.
Minim—A drop.
Minimum—The least.
Mitral Valves—Valves of the heart.
Molars—The teeth used for grinding.
Molecule—The smallest portion of matter which can exist alone.
Morbid—Unhealthy; diseased.
Morbific—Producing disease.
Morbus—A disease of the bowels.
Mortification—Decay.
Mucilage—A glutinous solution of gum.
Mucous Membrane—The membrane which lines all the cavities of the body which open externally.
Mucus—A mucilaginous fluid secreted by the mucous membrane.
Muscle—An organ which produces motion by its contraction.
Myalgia—Muscular rheumatism.
- Narcotic**—A medicine which produces sleep or relieves pain.
Nasal—Belonging to the nose.
Nausea—Sickness at the stomach with inclination to vomit.
Nauseant—A medicine which causes sickness at the stomach.
Navel—Center of the abdomen.
Necrosis—Decay or death of bone.

- Negus**—A liquid made of water, wine, nutmeg, sugar and lemon juice.
Nephritic—Pertaining to the kidneys.
Nephritis—Inflammation of the kidneys.
Nervine—A medicine which soothes nervous excitement.
Neuralgia—Pain in the nerves.
Neurasthenia—Nervous exhaustion.
Nevus—A birthmark.
Nitrogen—One of the gases in the atmosphere.
Nocturnal—Occurring at night.
Node—A knot, a protuberance.
Normal—Healthy, natural.
Nostalgia—Homesickness.
Nostrum—A patent medicine; a quack medicine.
Noxious—Injurious, disagreeable.
Nutritious—Possessing nourishment.
Nutritive—Nourishing.
Nymphomania—Excessive desire in the female for sexual intercourse.

Obesity—Stoutness; excessive fatness.
Obstetrical—Pertaining to midwifery.
Obstetrics—The science of midwifery.
Obtuse—Dull.
Occipital—Pertaining to the back part of the head.
Ocular—Pertaining to the eyes.
Oedema or Edema—A watery swelling.
Olfactory—An organ of smelling.
Omentum—The covering of the bowels.
Ophthalmia—Inflammation of the eyes.
Ophthalmoscope—An instrument used for examining the eyes.
Opiate—A medicine containing some form of opium and producing sleep.
Optic—Pertaining to the eye or to sight.
Orthopnea—A disease, as asthma, which is attended with difficulty in breathing.
Osseous—Resembling or formed of bone.
Ossification—Turning into bone.
Ossify—To turn to a bone-like substance.
Os Uteri—The mouth of the womb.
Otoscope—An instrument used for examining the ear.
Ovary—The female organ in which the ovum or egg is formed.
Ovariectomy—The operation for the diseases of the ovary.
Ovum—An egg.
Oxygen—A gas which forms one-fifth of the atmosphere.

Pabulum—Food.
Palatableness—Degree of pleasantness to the taste.
Palate—The roof of the mouth or the partition separating the cavity of the mouth from that of the nose.
Palliative—A remedy which relieves pain.
Palpitation—A violent fluttering and irregular beating of the heart.
Panacea—A cure-all; a medicine for all diseases.
Panada—A soft and nourishing food.

- Pancreas**—The sweetbread; a gland located in the abdomen.
- Papillæ**—Small elevations on the skin and tongue.
- Paracentesis**—Puncturing of the abdomen or chest for the purpose of drawing off water.
- Paralysis**—Loss of control of any organ; palsy.
- Paralytic**—One having paralysis.
- Paraplegia**—Paralysis of the lower part of the body.
- Parasite**—An animal or plant which lives in or upon another.
- Parenchyma**—The soft cellular substance of the tissues of plants and animals.
- Parotid Glands**—The glands which secrete the saliva.
- Paroxysm**—A spasmodic or periodical convulsion.
- Parturition**—The act of bringing forth young.
- Patella**—The knee-pan.
- Pathognomonic**—Characteristic of a disease.
- Pathology**—The science which treats of the causes and nature of diseases.
- Pectoral**—Pertaining to the chest.
- Pedicle**—The narrow part of a tumor.
- Pediculus**—A louse, (plural, *Pediculi*).
- Pelvis**—The bony cavity forming the lower part of the trunk.
- Pepsin**—A substance in the stomach which aids digestion.
- Peptic**—Aiding digestion.
- Percussion**—Tapping upon the body to judge of the condition of the internal organs.
- Perflation**—The act of blowing through.
- Pericardium**—The membrane or sac enclosing the heart.
- Pericarditis**—Inflammation of the membrane enclosing the heart.
- Perichondrium**—The membrane which covers the cartilages.
- Pericranium**—The membrane covering the bones of the skull externally.
- Perineum**—The part between the genital organs and the anus.
- Periodicity**—The state of having regular periods of change.
- Periosteum**—The membrane which covers the bones.
- Peristaltic**—Contracting in successive circles.
- Permeate**—To pass through the pores without rupturing.
- Permeable**—Capable of being permeated.
- Perspiration**—Sweat.
- Petechiæ**—Purple spots which appear on the skin in low fever.
- Phagedenic**—Eating, corroding.
- Phalanges**—The bones of the fingers and toes.
- Pharynx**—The cavity at the base of the skull or back part of mouth and upper part of throat.
- Phlebotomy**—The letting of blood.
- Phlegm**—Mucus from the bronchial tubes.
- Phlegmatic**—Sluggish, dull, heavy.
- Phlegmon**—Inflammation of the cellular tissues.
- Phlegmonous**—Of the nature of phlegmon.
- Phlogistic**—Inflammatory.
- Phthisical**—Pertaining to phthisis or consumption.
- Phthisis**—Consumption.
- Physiognomy**—The countenance or face.
- Physiology**—The science which treats of the organs and their functions.
- Placenta**—The appendage which connects the fetus with the parent.

Plasma—The colorless fluid of the blood.

Plethora—The state of being too full.

Plethoric—A full habit of body; corpulence.

Pleura—The membrane which covers the lungs and lines the chest.

Pleurisy—Inflammation of the pleura.

Plexus—Any network of vessels, fibres or nerves.

Pneumonia—Inflammation of the lungs.

Polypus—A tumor shaped like a pair; a tumor which grows from mucous membranes.

Portable—That which may be carried.

Portal Vessels—The cluster of veins which join and enter the liver.

Post-mortem—After death.

Potable—Drinkable.

Pregnancy—The condition of being with child or with young.

Premonitory—Giving warning beforehand.

Prescription—A formula for the preparation of medicines.

Probang—An instrument for relieving animals that are choking.

Probe—An instrument for examining a wound; to examine with a probe.

Process—A projecting part; a protuberance.

Prognosis—Fortelling the course and termination of a disease.

Prolapsus—The falling downward or forward of a part.

Prolapsus Ani—The falling of the anus.

Prolapsus Recti—The falling of the rectum.

Prolapsus Uteri—The falling of the uterus, or womb.

Prophylactic—Preventive; a preventive medicine.

Prostration—Loss of strength.

Proteids—Foods composed of hydrogen, carbon, oxygen and nitrogen. The white of an egg is an example.

Protozoan—A primary division of the animal kingdom.

Pruritus—Itching.

Pruritus Vulva—A disease in which there is great itching of the vulva.

Pseudo—False.

Ptyalin—A ferment contained in the saliva.

Ptyalism—Salivation; an excessive flow of saliva

Puberty—Full growth; the age at which one is capable of begetting young.

Puerperal—Pertaining to childbirth.

Pulmonary—Pertaining to the lungs.

Pulmonic—A medicine used for diseases of the lungs.

Pulmonitis—Inflammation of the lungs.

Pulsate—To throb or beat.

Pulse—The beating of the heart and arteries.

Pulp—A soft mass.

Pungent—Bitter acrid, piercing.

Pupil—The opening in the colored curtain of the eye.

Purgative—A medicine which causes the bowels to move freely.

Purulent—Consisting of matter or pus; resembling pus.

Pus—An unhealthy yellowish-white matter produced by suppuration.

Pustules—Pimples on the skin which contain pus.

Putrefaction—Decomposition by fermentation.

Putrescent—Pertaining to putrefaction.

Putrid—Rotten, decomposed.

Pylorus—The opening from the stomach into the intestines.

Pyrosis—Water-brash.

Quiescent—Being at rest.

Quickening—The time when movements of the fetus in the womb are first noticed.

Rabies—Hydrophobia.

Rales—The noise made by air passing through mucus in the lungs.

Ramify—To divide into many branches.

Raphe—The appearance of parts as if sewed together.

Receptacle—That which contains or receives.

Rectal—Pertaining to the rectum.

Rectum—The lower part of the large bowel.

Recumbent—Lying down; reclining.

Recurrent—Returning from time to time.

Refrigerant—Medicines which lessen fever or heat.

Regimen—Systematic treatment and diet to restore health.

Regurgitation—The act by which blood is forced or allowed to flow back in an unnatural manner.

Remission—A temporary subsidence of pain or disease.

Remittent—Having remissions.

Reproduction—The production of young.

Resolution—The disappearance of inflammation without the formation of pus.

Resolvent—A medicine having power to disperse inflammation.

Respiration—Breathing.

Restorative—A medicine which restores health and strength.

Resuscitation—Reviving from apparent death.

Retina—The internal nervous tissue of the eye where the image is formed in seeing.

Retrocession—The change of an eruption from the surface to inner parts.

Revulsive—Hostile, repugnant.

Rheum—A thin fluid secreted by mucous glands.

Rickets—A disease or softening of the bones.

Rigor—A convulsive shuddering.

Rubefacient—An external application like mustard which causes redness of the skin.

Rubific—To make red.

Saccharine—Like or containing sugar.

Sacral—Pertaining to the sacrum.

Saline—Salty.

Saliva—The spittle; the secretion of the glands of the mouth.

Salivation—An excessive secretion of saliva.

Salutary—Wholesome.

Sanative—Healing, curative.

Sanguine—Hopeful.

Sanies—A thin fluid discharged from wounds or ulcers.

Sanitary—Pertaining to health.

Sanitation—The act of rendering healthy.

Scab—A crust or formation over a sore in healing.

- Scarf-skin**—The cuticle or outer skin.
Scapula—The shoulder blade.
Scale—A flat, thin, horny outgrowth of skin.
Sciatic—Pertaining to the hip.
Sciatic Nerve—The large nerve of the thigh.
Scirrhus—Pertaining to scirrhus.
Scirrhus—A certain kind of cancerous growth.
Sclerotic—The hard white outer coat of the eye.
Scorbutic—Pertaining to or of the nature of scurvy.
Scrofulous—Affected with scrofula; pertaining to scrofula.
Scrotum—The bag which contains the testicles.
Scurvy—A disease due to impaired nutrition.
Sebaceous—Giving fatty secretions.
Secrete—To separate or take from the blood.
Sedative—A quieting medicine which allays irritation and soothes pain.
Sedentary—Inactive.
Semiflexion—Bending half over.
Seminal—Pertaining to or contained in seed.
Senile—Pertaining to old age.
Sensorium—The seat of sensation.
Septic—A substance which promotes putrefaction.
Septicæmia—Blood poisoning.
Sequel—That which follows; the results.
Serous—Watery, thin.
Serum—The watery or liquid portion of the blood.
Sewerage—System of sewers.
Sewage—Refuse material removed by sewers.
Shank—The part of the leg from the knee to the foot.
Sialogogue—A medicine which increases the flow of saliva.
Sinapism—A poultice or plaster of mustard.
Sinew—That which unites the muscles to the bones.
Slough—To fall off; the dead part which falls off.
Solution—Composed of liquid and a solid substance; a dilution.
Solvent—Having the power to dissolve solids.
Soporific—A medicine which induces sleep.
Sordes—Excretions; foul matter.
Spasm—A cramp; a convulsion; a sudden contraction of muscles.
Specific—An infallible remedy; a sure-cure.
Speculum—An instrument for throwing light into passages of the body for the purpose of examination.
Sphincter—A muscle that contracts the orifice.
Spinal—Belonging to the spine.
Spinal Column—The back-bone.
Spinal Cord—The nervous marrows in the back-bone.
Spleen—An organ situated in the abdomen and attached to the stomach.
Splint—A bony tumor on the splint bone of a horse.
Sporadic—Separate, single, scattered.
Squamous—Having scales.
Sternum—The breastbone.
Stertor—Snoring; noisy breathing.
Stertorous—The act of snoring.

- Stethoscope**—An instrument used for listening to the sounds of the lungs and heart.
- Stimulant**—A medicine which increases vitality or excites healthy action.
- Stomachic**—Pertaining to the stomach; a medicine which excites the action of the stomach.
- Stomatitis**—Inflammation of the mouth.
- Stool**—A discharge from the bowels; to discharge from the bowels.
- Strangulated**—Choked; having the circulation stopped.
- Strangulation**—Suffocation.
- Stranguary**—A difficult and painful discharge of urine.
- Stricture**—An unnatural contraction of a passage of the body.
- Struma**—Scrofula.
- Strumous**—Pertaining to scrofula.
- Stupor**—Numbness, insensibility.
- Styptic**—An astringent; a medicine which stops bleeding.
- Subcutaneous**—Under the skin.
- Submaxillary**—Under the jaw-bone.
- Sudor**—Sweat.
- Sudorific**—A medicine that causes sweating.
- Suppository**—Medicinal substances introduced into the rectum or vagina.
- Suppurate**—To generate pus.
- Supperation**—The act or process of generating pus.
- Suture**—A seam.
- Symptom**—A sign or token of disease.
- Syncope**—Fainting or swooning.
- Synchronous**—Occurring at the same time.
- Synovia**—A fluid which resembles the white of an egg and lubricates the joints.
- Syphilis**—A contagious venereal disease.
- Syphilitic**—Pertaining to syphilis.
- Syphon**—A tube or pipe.
- Syringe**—An instrument for injecting liquids into various parts of the body.
- Tannic Acid**—An astringent made from oak bark.
- Tapping**—Drawing off collected fluid.
- Tartar**—A substance which forms on the teeth.
- Tegument**—The covering of the body.
- Temperament**—A peculiar habit of body.
- Tendon**—A tough cord uniting a muscle to some other part.
- Tenesmus**—Difficulty and pain at stool.
- Tenuity**—Thinness.
- Tepid**—Lukewarm.
- Tergal**—Of or pertaining to the neck.
- Tertian**—Occurring every other day.
- Testes**—The testicles.
- Testicles**—Glands situated in the scrotum and containing the seminal fluid.
- Tetanic**—Pertaining to the art of healing.
- Tetanus**—Lockjaw.
- Therapeutic**—Pertaining to the art of healing.
- Thorax**—The chest.
- Tibia**—The large bone in man below the knee; the inner of the two bones of the hind limb of an animal above the hock.

Tincture—Spirits containing medicine in solution.

Tonic—A medicine that increases the strength of the system.

Tormina—Severe griping pains.

Tonsils—Glands on either side of the throat.

Torpid—Dull, sluggish.

Torpor—Inactivity.

Torsion or Tortion—The act of twisting.

Torniquet—An instrument used to stop or arrest bleeding.

Trachea—The windpipe.

Tracheotomy—A surgical operation on the trachea or for croup.

Translucent—Partially transparent.

Transpiration—Exhalation from the skin.

Transude—To pass through the pores.

Traumatic—Relating to wounds; a medicine used to cure wounds.

Tractile—Capable of being drawn out.

Tremor—An involuntary shivering.

Trephining—Removing a piece of bone from the skull by an operation.

Triturate—To pulverize or grind to a powder.

Tubercle—A tumor or swelling.

Tumefaction—The act of swelling or forming a tumor.

Tumer—A rounded projection of bone.

Tumor—A morbid enlargement or swelling of any part of the body.

Tympanum—The ear-drum.

Typhoid—Weak; low; resembling typhus.

Typhus—A nervous or exhaustive fever.

Ulcer—A sore which discharges pus.

Ulna—The larger bone of the forearm in man or the elbow of the foreleg in animals.

Umbilic—Pertaining to the navel.

Umbilicus—The navel

Uræmic—Pertaining to an accumulation of the principles of urine in the blood.

Urea—A substance found in the urine.

Ureter—The duct running from the kidneys to the bladder.

Urehra—The canal through which the urine passes out of the body.

Uric Acid—An acid contained in the urine.

Urinary—Pertaining to the urine.

Urine—The water or secretion from the bladder.

Uterus—The womb.

Uvula—The soft part of the palate; the part of the palate which hangs down.

Vaccinate—To inoculate with cow-pox by inserting the vaccine under the skin.

Vaccine—Matter derived from cows for purpose of vaccination.

Vagina—The canal or passage from the womb to the vulva.

Vaginismus—Spasm of the vagina caused by irritability.

Valetudinarian—A person of a sickly or weak constitution.

Varicose—Swollen or enlarged.

Variolous—Pertaining to small-pox.

Vascular—Full of vessels such as veins and arteries.

Veins—The vessels which return the blood to the heart.

Venery—Sexual indulgence.

- Venesection**—The operation of opening a vein; phlebotomy.
Veneous—Pertaining to the veins.
Ventilation—A free admission of air.
Ventral—Belonging to the belly.
Ventricles—Small cavities in a body; the posterior cavities of the heart.
Vermifuge—A medicine which destroys or removes worms.
Vertebra—A bone of the spinal column.
Vertigo—Dizziness.
Vesicant—A blistering application.
Vesication—The process of blistering.
Vesicle—A small bladder or sac.
Veterinary—Pertaining to the art of treating domestic animals.
Villi—Very small thread-like projections.
Virile—Pertaining to a man.
Virulent—Malignant, poisonous, extremely dangerous.
Virus—Poisonous or contagious matter.
Viscera—The organs contained in the abdomen.
Viscid—Sticky; like glue.
Viscus—Any internal organ.
Vitiate—To contaminate; to spoil.
Vitreous Humor—The fluid in the eye behind the lens.
Volatile—Easily evaporated; capable of wasting away.
Vulnerary—Pertaining to wounds; useful in healing wounds.
Vulva—The external opening of the genitals of the female.
Whites—Fluor Albus; leucorrhea.
Zymotic—Contagious diseases such as may be inoculated.

SUPPLEMENT.
(Additional Recipes.)

This image shows a single page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or printed text on the page.



DR. FAIR DICTATING LETTERS TO STOCK OWNERS.

Four times a day the mail brings numerous inquiries from all parts of the United States and Canada pertaining to the ailments of live stock. Many of these letters are from readers of this book and subscribers to "The Ohio Farmer" and "The Michigan Farmer." It is not unusual for Dr. Fair to receive fifty or one hundred letters of this kind daily.

(Photographed at Dr. Fair's office especially for this book.)



ANSWERING CORRESPONDENCE.

Lady Stenographers in Dr. Fair's office busy typewriting letters that the Doctor has dictated in answer to inquiries from farmers and stock owners from all parts of the country. Also, one of his assistants answering telephone calls.

(Photographed at Dr. Fair's office especially for this book.)

SUPPLEMENT.
(Additional Recipes.)

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VETERINARY INDEX.

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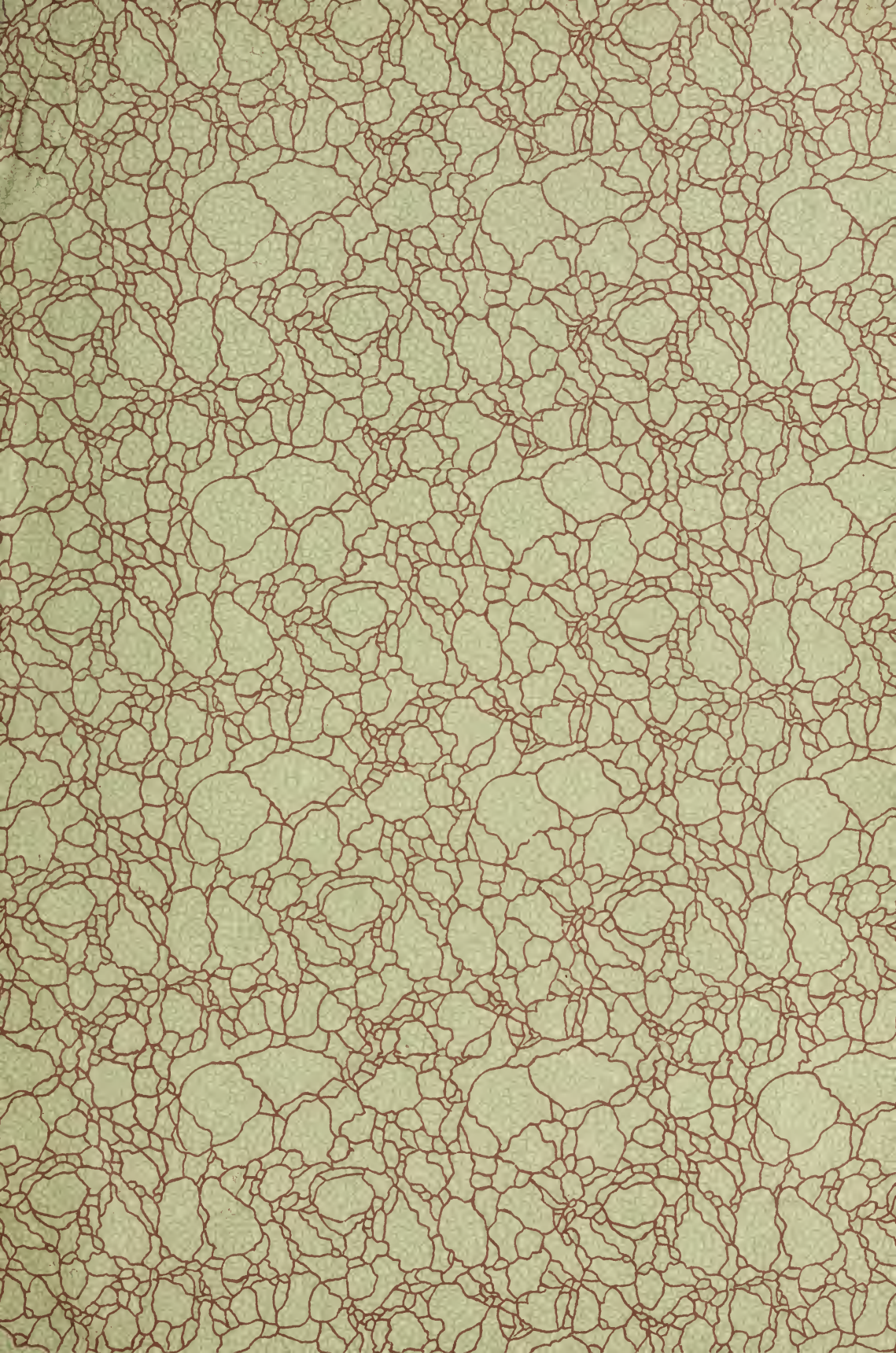
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